

1 Canadian Rocket Battery, RCA, 1944 - 1945



Edited by
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The Land Service Mattress

The Origin and Life of the First Canadian Rocket Battery, RCA

by D.C. Knight

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During one of the battles for North Africa during the Second World War, the unit commanded by Lieutenant-Colonel Michael Wardell was heavily attacked and the British defence was about to collapse. In desperation, he obtained the support of a nearby anti-aircraft battery and convinced them to engage the Germans with their multiple anti-aircraft rocket projectors. While the actual damage inflicted by the rockets remains vague, they had a significant morale effect on the Germans and the attack was stopped. Wardell was wounded in the engagement and was invalided back to England.

Wardell was impressed by the effects of the impromptu rocket attack and he became active in the development of a rocket projector for land use. The problems were substantial. Insufficient range, accuracy and the prejudice of those who controlled artillery development against anything unconventional resulted in considerable frustration and disappointment. Nevertheless he persevered, and in early 1944 he gave a demonstration of a prototype multiple rocket projector at Larkhill. Lieutenant-Colonel W. Eric Harris, who was in the Artillery Staff Duties Section of Canadian Military Headquarters, attended the firing.

The Canadian interest in rockets started when Major James Hahn attended a demonstration in Aberporth in 1943. His recommendation resulted in Captain R.E. Kirkpatrick being sent to the British Rocket Research Establishment. At the same time, the liaison officer with the Controller of Projectile Development, Captain R.J. Rannie, was asked to forward regular updates on rocket progress to CMHQ.

Harris was very impressed by the demonstration of Wardell's rockets. In the mess that evening, he had long discussions with Wardell, who considered that his project had failed to attract the necessary official attention. The British opinion was that the system looked good, but that it was too late because it would take at least two years to develop! Harris and Wardell decided to see if the Canadian Army would support the project.

On his return to London, Harris convinced his superiors of the system's potential. He was authorized to support Wardell, as long as it did not strain relations with the War Office. By 18 May 1944, two prototype 40-tube projectors were being constructed on a priority basis. They were rudimentary; in the firing position, they were simply tipped up on a rear spade with no further adjustments for elevation. The rockets used a 29-pound warhead from the naval mattress rocket ships, a 3-inch aircraft rocket motor with cut-down fins, and a standard army base-detonating fuse.

Major variations in range were achieved by fitting spoilers, or large discs, on the nose of the rocket. As eventually developed, there were three sizes of spoilers, coloured red, blue, and white. They provided a simple method of varying range and dispersion, but had the disadvantage that a moving target could pass from one spoiler zone to the next, which would involve changing the spoilers and delay the firing.

The first prototype fired a full salvo at Aberporth, Wales, on 16 June 1944, at a maximum range of 8,250 yards. A further demonstration was scheduled for 1 July 1944 at Larkhill, but events postponed this until 13 July when it was fired in front of a large group of senior officers including Brigadier H.O.N. Brownfield, who was the Brigadier Royal Artillery at First Canadian Army Headquarters.

A competitor to the 40-tube projector was a large 84-projector unit mounted on a semi-trailer. This used fourteen standard naval "mattress" sections which the Royal Naval Dockyard at Portsmouth had assembled in one week. However, it had a fixed, unalterable range of 3,500 yards, and no possible traverse except by moving the trailer. These limitations and the fact that no trailers could be made available, ended its trial.

Wardell's prototype projector had 40 tubes in five rows of eight, mounted on a two-wheeled trailer. In the firing position, it was supported on a rear spade, and elevation could be adjusted from 30 to 45 degrees using a jack. A second prototype also permitted five degrees of traverse each side of the centre line.

The rocket was a tri-service hybrid, with a naval warhead, an aircraft rocket motor, and the army No. 721 fuse. The fuse had been changed to give faster action, and reduce the penetration of the rocket into the ground before bursting. The 29-pound warhead was considered by the Ordnance Board to be the equivalent of a 5.5-inch shell. A single projector could deliver the equivalent of two full regiments of medium artillery. However, the guns could keep up a steady fire whereas the projector took 15 minutes to reload.

Brigadier Brownfield was favourably impressed with the demonstration, and was in a critical position to support the project. In his capacity as senior gunner in First Canadian Army, he was able to present the requirement for the equipment at a senior level. The British 21st Army Group, in which First Canadian Army operated, was not enthusiastic about new projects that might interfere with the production of conventional ammunition, and there was ongoing concern about the availability of manpower. It was probably useful that the Canadian Corps and Army commanders both had artillery backgrounds.

Nevertheless, it required considerable personal attention on the part of Harris and Wardell to get the system produced. The personnel availability was overcome by using the manpower of light anti-aircraft gun batteries, and superimposing rocket-trained personnel as a command and control cadre. At this point in the war, the Allies had such a command of the air that the anti-aircraft units were not fully employed. The Larkhill trial indicated that untrained personnel could be taught to use the projector in one day. This was optimistic and in the event, about two weeks were required. In fairness, the LAA batteries were not trained in field artillery techniques, and required considerable basic field gunnery training as well.

The project probably violated every known principle of project management. It was controlled by two men with significant contacts on the "old boy net", and who were enthusiastic about the equipment. Since the official requirement had been raised by First Canadian Army as a Canadian project, some of the British conservative opposition was overcome, but it did require high level intervention by senior officers at CMHQ to break some log jams. Once that was accomplished, Harris and Wardell received at least reasonable cooperation, but some of the details as to how the system was produced are illuminating.

Sir Alwyn Crow of the Projectile Development Establishment at Fort Halstead had the authority to construct up to twelve samples of any project which he considered to have promise beyond the prototype stage. With Crow's authorization, Wardell, through the Ministry of Supply, was able to fund a small company (Meyer-Dunford, who were peacetime manufacturers of bottling equipment) to manufacture twelve projectors for operational trials. It appears that they were built "as per sample" with minimal drawings or specifications. S/Sgt A.W. Holmes and several other craftsmen of the Royal Canadian Electrical and Mechanical Engineers assisted in the actual manufacture of both the prototypes and production models. The first prototype was sent for quick towing trials, and the second was rushed to the Canadian School of Artillery (Overseas), (C.S.A.(O)) to permit development of gun drill and maintenance techniques. This had been arranged by Harris who had been the first commander of the C.S.A. (O). The two prototypes were not identical, in that the first had a gate to retain the rockets in the launcher while travelling. After the development of the gun drill, the second prototype was returned to the manufacturer to serve as a quality control standard for the remaining ten production models!



A Meyer-Dunford 32-tube Land Mattress, loaded in firing position. The rocket "pigtails" (electrical connection) can be seen dangling from the bottom of the tubes. DND

At the same time, a more conventional contract was let with the Tillings-Stephens company to produce the service launchers. If it had been necessary to wait for the

conventional production process, the project would indeed have been too late. The production Tillings-Stephens equipments did not arrive in France until the end of March 1945. However, two Tillings-Stephens prototypes were delivered to the C.S.A.(O) in time to accompany the "Land Mattress Party" to Europe.

In the meantime, Wardell had arranged for the Navy to fill (on an "experimental" basis) approximately 11,000 warheads that had been suitably modified to accept the number 721 fuse. No. 1 Canadian Base Workshop, RCEME, was tasked to produce the adaptors between the warhead and the rocket motor. The Royal Air Force provided the rocket motors, but Harris had to provide transport for all the pieces to manufacturing and assembly locations. Much of the movement was carried out by Royal Canadian Army Service Corps units, frequently accompanied by a project officer to ensure that lack of proper documentation was not a problem. It must be remembered that the Land Service Mattress was always a non-standard equipment, and was not handled by routine ordnance channels.



Lt-Colonel H.E. Chater demonstrates a Land Mattress rocket. DND

The fuse was an ongoing problem. The British Ordnance Board did not believe the safety mechanism in the fuse was adequate, but CMHQ formally accepted the risk and the Board acquiesced. The fuse, as most of the other parts, was chosen for its availability rather than its suitability, and, although a better fuse was developed by the end of the war, it never saw service. Supplies were obtained by sorting through more than 600,000 fuses, which had been assigned to scrap, in order to find the correct variant. Furthermore, there was an incompatibility at the extreme ends of the manufacturing tolerances between the fuse and the spoilers, so the fuses had to be sorted again when the rockets were assembled in order to eliminate those which would not fit.

On 10 September 1944, ten officers from the Officers Training Wing at C.S.A.(O) started development of the gun drill. The prototype projectors required modification in the school workshops before the drill could be developed. Captain Rannie provided much of the technical rocket background. The gun drill was completed by Lieutenant W.S. Jackson and Battery Sergeant Major E. Noakes, both of whom were to stay with the Land Mattress until the end of the war. Command of the Land Mattress Party was assumed by Major E.A. Royce on 18 September 1944.

The name of the unit was continually changing. During development, it was known as the Land Mattress Party or Cadre. After the successful operational trials, it became 1 Canadian Rocket Unit on 23 December 1944. To give it a greater artillery flavour, it was renamed 1 Canadian Rocket Battery on 17 February 1945.

The rockets could be significantly affected by low level winds at the launch site, and a method was required to measure them. Captain Rannie created a machine which took ten men and four hours to erect, but Harris finally solved the problem by producing a combination of two anemometers. Battery Sergeant Major McAfee took charge of all the meteorology for the battery, and also amended the range tables after a firing at Beachy Head on 23 September.

The culmination of the development was a demonstration firing using two projectors on 26 September. After a flurry of activity, including a rather scenic tour of London as a result of inexperienced drivers and a lack of maps, the projectors, stores, and vehicles were loaded on the *Sammont* for shipment to France at 0900 hours on 30 September.

Consider the achievement: in nine weeks, a single prototype launcher was expanded into a complete rocket battery of equipment and 10,000 rounds of ammunition. Admittedly, most of the parts were "off the shelf", but they needed modification, and they had not been integrated into a single system until 14 July. Few, if any, weapon systems can claim this progress, and the credit is due entirely to the drive and persistence of Harris and Wardell.

The Land Service Mattress Cadre spent eight days at sea off Arromanches, France, because of the weather, but finally landed on 10 October. They arrived in Bruges on 15 October, and the training of 112 LAA Battery in the use of the equipment started on 17 October. The battery was very enthusiastic but it was necessary to conduct some very basic training; antiaircraft units were not familiar with the dial sight and director (a survey instrument for aligning the projectors to the arc of fire). In addition there was continuous development of the gun drill and fire control procedures. In fact, a formal gun drill pamphlet was never written; the drill was always on loose foolscap paper.

On 18 October the projectors arrived. One of the two Tillings-Stephens prototypes had been badly damaged when being unloaded, and was returned to England. The remaining prototype and the ten Meyer-Dunfords all needed welding repairs. On 29 October, the battery gave a successful demonstration at Bourg Leopold range to Brigadier Brownfield and other officers from First Canadian Army Headquarters.

The first operational use of the Land Mattress was in support of the attack on Flushing. The aim was to neutralize open-topped anti-aircraft gun positions. The projectors were in position on 31 October and, starting at 0620 hours the following morning, the battery fired three troop salvoes (of four projectors each), followed by several individual projector salvoes. Immediately in front of the battery position was a medium gun regimental position. Despite the fact that they had been warned of the signature of the rockets, when the projectors fired, it was noted that the medium gunners immediately took cover in their slit trenches and were not seen for some time!

It was during this operation that the first and only attempt was made to use observed fire on targets of opportunity. Harris and Royce climbed into a windmill and tried to engage a target whose location was not precisely known. Using normal ranging procedures, single rockets were directed at the target. Unfortunately, as the range was altered, it moved into the next spoiler zone. This involved a delay to change all the spoilers and the attack had overrun the target before the battery was ready to fire. Harris was not pleased, but it was a good demonstration of the limitations of the system.

From 6 to 8 November, the battery was deployed in support of the First Polish Armoured Division in their attack on Breda-Moerdijk. The action opened with 764 rounds fired at first light on 6 November, followed by a number of troop salvoes and a full battery salvo into Moerdijk on the morning of 8 November. One salvo caught a group of 90 Germans in the open, resulting in 30 casualties and the rest surrendering. Three projectors were damaged by muzzle prematures or developed electrical faults. Ammunition preparation was a major problem, but was solved by Major Benson of 112 LAA Battery gathering a diverse group of cooks and clerks to assemble the rounds. No complaints were noticed since the battery commander himself was busily preparing ammunition. At the end of the operation, the Polish division had high praise for the effect of the rockets.

By 8 November 1944, there were ample results from the operational trials. Brigadier Brownfield noted in his summary that the Land Mattress was definitely an area weapon. In order to get the best effect he believed there was a requirement to equip two more batteries, although it was agreed that ammunition supply might be a problem. He wanted an immediate supply of 15,000 rockets per month.

Ammunition supply was to be an ongoing problem and was never adequately solved. Unlike standard types of ammunition for the 25-pounder or 5.5-inch guns, the Land Mattress rockets were unique to a single unit and had to be handled as a special item. This frequently meant that battery trucks had to drive to a port and pick up the ammunition. Special arrangements had to be made in England for the production of the pieces, and while this made considerable use of existing parts, much sorting was required. The spoilers were a particular supply problem, in that there were three types and any one type might be used in any engagement, leaving two sets of spares available for future use. Considerable correspondence was required to ensure that an adequate supply was available without having large quantities of the wrong size.

On 10 November, 112 LAA Battery turned the equipment over to 338 LAA Battery R.A., and for the next two months, the Land Mattress was used in support of the British Army. Major E.S. Stronach took over command from Major Royce. Remember that the rocket battery was only a cadre, which was superimposed on an existing LAA battery. Its efficiency was always dependent on that of the base unit. All training was carried out by the rocket battery officers and NCOs, and repairs were carried out by a supporting RCEME Light Aid Detachment, (later to become 127 LAD, RCEME, and still later 131 LAD, RCEME). On 4 December, the battery set up a base training camp near Tilbury, Holland, which was used until the end of the war.



The Rocket Battery firing a salvo. Several rockets can be seen in the air. The rockets were fired at ¼-second intervals. DND

On 3 December two full battery salvoes were fired at Venio in support of *Operation Guildford*, during which the 15th Scottish Division captured the west bank of the Maas River. A letter of thanks was sent to General Crerar by the British Corps Commander. Later, from 9 to 15 December, the battery prepared 2,500 rounds of ammunition to support an attack by 30 British Corps. When the attack was cancelled, the ammunition had to be returned to the depot. Rather than repack the whole lot, it was transported in racks in the back of 3-ton trucks. 128 rockets could be carried in each truck in this way, and it was so successful that it became the standard method of transport.

On 16 December, 337 LAA Battery, R.A. replaced 338 LAA Battery as the under-lying unit. Training was started, but was interrupted by the battery returning to anti-

aircraft duties during the German Ardennes offensive. Training was completed on 10 January. In the meantime, 338 Battery took eight of the projectors in support of the 3rd Polish Infantry Brigade at Kapelsche Veer. By this time, wear was causing the elevation and traversing gears to jam regularly. The LAD managed to repair the gears, but a problem with the control boxes was more difficult. After the rockets were loaded the firing switches had to be reset (like a circuit breaker in house wiring). However, the control box was not very sturdy and wires frequently shorted out. The result was that when the resetting switch was pressed, there was a tendency for some rockets to fire immediately. No one was injured, but it was unsettling for the detachment commanders. The Poles were very pleased with the support since a previous attack without rocket support had failed.

At Sittard on 18 January, 337 Battery used the projectors operationally for the first time in support of 12 British Corps. The battery was inexperienced, and it was noted that they lacked a sense of urgency. During this operation, it became apparent that the maximum time the projectors could stay in continuous action was about ten days, after which a 48-hour rest was required to recharge the launcher batteries.

On 24 January, 337 Battery was replaced by 30 LAA Battery, part of 6 LAA Regiment, 2 Canadian Corps. Since the battery now had official status, it began to receive its authorized vehicles and equipment. Battery transport went to Oostende, Belgium, on 31 January to pick up the next shipment of ammunition. Operational forecasts required that it be assembled at a rate of 2,000 rounds per day. BSM Noakes gathered a labour crew of 250 men and the work was completed on time, but at the expense of ignoring the assembly drills. By 6 February, the ammunition was loaded on seventy vehicles and moved to a new location. On the way, one truck overturned, but there was no explosion, so the rockets were loaded on another truck and the trip completed. On arrival, an inspection revealed that twelve rockets had lost their safety caps and collars in the accident, and had been transported 50 miles in this condition!

From 8 February until 8 March, the battery was in support of *Operation Veritable*, the crossing of the Rhine River. During this time they engaged 33 prearranged targets, expending 13,300 rockets, which was all the ammunition in the theatre! On one occasion, a record reload time of seven minutes was achieved, which was attributed to greater personnel experience with the equipment and a new type of connecting plug for the rockets. Only one rocket motor in the 13,300 burst on firing. There was a theoretical probability that one in 10,000 would malfunction in this way, and the battery experience supported this estimate.

There had been considerable worry that the signature of the rockets would make the battery a high risk target for counter-bombardment. The risk was thought acceptable, in that the launchers were relatively inexpensive and the men relatively protected during firing. In the event, there was never any serious counter-bombardment of the unit. Casualties did occur, but the shelling was more of a routine nature.

The confused nature of the front lines at this time of the war was highlighted by some scouting done by 127 LAD. Lieutenant Tripp was leading his LAD and took the wrong road. Rather than turn around, he continued on and took another route. It was only when he got to the new position that he realized that they had crossed the front lines - twice!

Training continued with 364 Battery R.A. and 30 Battery of 6 LAA Regiment. Twelve Tillings-Stephens projectors were received on 18 March. These were the first of the

normal production projectors, demonstrating that had it not been for the unconventional method of producing the Meyer-Dunfords, there would have been little use of the land mattress in the war. The top traverse of the new equipments was 20 degrees, as opposed to 9 degrees in the earlier model, which simplified the deployment. However, all required modification by RCEME before they could be considered operational.

The battery fired 20 salvoes from 23 to 29 March in support of *Operation Plunder*, in which 51st Highland Division crossed the Rhine. In their wake, on 29 March 1945, the First Canadian Rocket Battery crossed the Rhine and entered Germany. The new projectors had considerable problems with buckling of the baffle plates at the base of the launch tube, which was attributed to loading at too high an angle. Considerable work was also required to overcome careless assembly of the tail pin adapters at the factory.

In the attack in the Arnhem area from 12 to 16 April, two rocket batteries were operated as a regiment. Manpower was provided by 337 Battery using the new projectors, and by 338 Battery using the Meyer-Dunfords. By this time the old projectors were giving very poor service, and they were replaced on 16 April. Still, they had served well and it is probably fitting that they took part in the only regimental (combined battery) salvo at 0600 hours on 16 April.

On the night of 25 April, the battery was warned that three self-propelled guns were moving down the road to their position. In addition to manning the Projector, Infantry Anti-tank and the Bren light machine guns, Lt. N.C. Reid called forward a projector and laid it on the road at three degrees elevation. Nobody was sure what effect the rockets would have on the armour, but it was agreed that the occupants would receive a nasty surprise. To everyone's disappointment, their enemy did not appear.

From 25 April to 2 May, nine salvoes were fired in support of 4 Canadian Division. The last salvo was fired at 1430 hours on 2 May 1945. One projector was totally destroyed by a bomb dropped by a Spitfire on 3 May; the only projector ever to be destroyed by "unfriendly" action. The war ended on 8 May 1945.

For the next six weeks, the battery was occupied in occupational duties. In mid-June the equipment was packed up and 1 Canadian Rocket Battery officially ceased to exist on 22 June 1945.

From the time that Major Royce took command of the Land Service Mattress Cadre until it was disbanded, 1 Rocket Battery, RCA, existed for 277 days. After the initial attack on Flushing, the battery supported every major attack by First Canadian Army until the end of the war. Indeed had the war lasted much longer, there would have been a Rocket Regiment.

By itself, the Land Mattress (or Projector, Rocket, Three Inch, Number 8, Mark 1 as the Tillings-Stephens projectors were formally designated) was not a war-winning weapon. However, as an example of the effective use of resources which would otherwise have been scrapped, it probably had few equals. It was best used in prearranged fire plans, and the troops believed that it reduced their casualties in the attacks. But, without the persistence of lieutenant-colonels Harris and Wardell, and the high level support of First Canadian Army, it would never have seen wartime service.

**A History
of
1 Canadian Rocket Battery, RCA,
during
The Second World War**

Introduction

At the end of the Second World War in Europe, every unit in First Canadian Army was ordered to write a brief unit war history (not to be confused with the unit war diary). When it was completed, they could go home. Those units with a peacetime journalist or historian in their ranks wrote weighty tomes (2nd Heavy Anti-aircraft Regiment's history is more than 100 foolscap pages of text, plus appendices). Others were much shorter.

This is a scan of the original document held in the Canadian War Museum in Ottawa. It was written by Lt. William Jackson based on the unit war diary.



*Lieutenant William Jackson.
He was the Battery Command Post Officer from its first
action at Breskens, Holland, in 1944, through to the end of
the war in Germany on 8 May 1945.*



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1945MOBILIZATION AND TRAINING IN ENGLAND

Ireland - 27 June 1944

On the 27 June 1944 a letter, written by Capt R.J. Rannie T.D.O. att to C.P.D. was sent to S.D.(T.D.) C.M.H.Q. giving details of the "LAND MATTRESS". The suggested use was put forward by C.P.D. and Lt. Col. Wardell of D.G.G.A.(X), M of S who had originated several projectors in the past. The War Office had indicated its requirements for a shock salvo of some description but had not accepted the Land Mattress as the answer.

The letter stated that one projector had fired one salvo at Aberporth on the 16 June 1944 with highly successful results. The projector consisted of 40 barrels of light gauge tube 5'6" long by 5.285" dia with the bore spiralled one turn in 8'6". The ammunition components were a 3", 12 1/2 lb tubular motor, a 29 lb, 5" dia H.E. warhead and a standard base fuze 878.

Ireland - 8 Aug. 1944.

A precis "The Value of the Land Mattress as a Counter-Mortar Weapon", compiled by Lt. Col. W.C. Harris S.D.(T.D.) at C.M.H.Q. was forwarded by the Chief of Staff C.M.H.Q. to First Canadian Army. It was suggested that Cdn Army demand the Land Mattress as a counter-Mortar weapon. Cdn Army did and the development of the Land Mattress got underway.

Ireland - 6 Sept. 1944

In a letter to the Under-Secretary of State, Lieutenant - General K. Stuart, Chief of Staff at C.M.H.Q. summarized the operational trials of the Land Mattress to date. These were:

1. PROJECTORS:- C.P.D. had underway the provision of ten projectors. Two projectors had already been completed, one was being delivered to W.V.E.E. Farnborough and the other to the C.S. of A (O) Seaford Sussex.

2. CROSS COUNTRY TRIAL:- This trial was to be carried out at W.V.E.E. Farnborough on the 8 Sept. 44 and was to be attended by representatives from C.P.D. & C.M.H.Q.

NOTE:- (The results of this trial were excellent, the projector had been towed fully loaded over fairly rough ground at speeds up to 40 M.P.H. The Projector stood up to all trials.)

3. UNIT EQUIPMENT:- Careful survey was to be made by C.P.D. & C.M.H.Q. for the supply of essential unit equipment. Arrangements were already made to deliver samples as soon as produced to C.S. of A (O) for trial and test.

4. TRIALS AND TESTS:- It was decided to centralize all trials and initial tests and solution of training problems at the C.S. of A (O). C.S. of A (O) were instructed to make available an instructor in Gunnery and a Canadian Officer with experience in Rockets (Capt R.J. Rannie) also a S/Sgt Electrician & Artificer were to be attached to C.S. of A (O) to work on trials and tests.

Instructions were given to C.S. of A (O) to consider & work out proper methods of laying out lines of fire, deployment and loading drill. They were also to give consideration to all matters affecting fire Discipline with a view to making the use of the equipment as nearly similar to standard Artillery practice as possible.

It was anticipated that an instructional group from C.S. of A (O) would proceed to France to give instruction to personnel of a unit, delegated by Canadian Army for carrying out operational trials.

In order that all matters could be reviewed and co-ordinated C.P.D. and C.M.H.Q. arranged a meeting of all concerned in the production of equipment and ammunition, also planning of trials at the C.S. of A (O) on the 15 Sept 44.

All British departments as well as Canadian departments were advised.

Ireland - 21 Sept. 1944

see Table

A time table for future operational trials was laid down as follows:-

22 Sept.-i T.S. Projector Model # 1 to C.S. of A also 320 complete rounds from C.P.U. to C.S. of A.

23 SEPT.-i Firing trials at Beachy Head ranges.

28 Sept.-i Instructional team with projector and 320 rounds to proceed to France - 4000 rounds to be completed at C.R.U. Amn dump.

30 Sept.-i Last of 10 projectors to be delivered from factory.

4 Oct. -i 10 Projectors (M.D.)
2 Projectors (T.S.)
4000 rounds
to be ready for shipment overseas.

5 Oct. -i C.M.H.Q. & C.P.D. Officers to proceed overseas to Cdn Army for operational trials.

8 Oct. -i New range table data to be available from Aberporth and to be sent by Courier to Cdn Army.

11 Oct.-i Balance of 6000 rounds to be shipped.

Equipment Modifications

On the 10th September 1944 ten Officers from the Officers' Training Wing at the C.S. of A (O) commenced evolving gun drill for the Land Mattress. The first worked on was an experimental model having 40 barrels but was replaced in a few days by the first of the 32 barrel Meyer Dumore models. Under the capable leadership of Capt R.J. Rannie mechanical faults in the equipment were corrected & modified in the C.S. of A M.T. garage by S/Sgt Holmes, R.C.E.M.E. electrician and S/Sgt McCarthy R.C.E.M.E. artificer. Lt. G.P. Caine and Lt. J.M. Burgess were other officers who assisted in the modification of the projector.

The main modifications were:-

1. Mounting the dial sight & sight clino bracket.
2. Mounting a field clino bracket on the top rear of the barrels.
3. Slots were cut in the elevating leg to simplify the placing of the front pad.

Gun Drill

Lt. W.S. Jackson assisted by B.S.M. Noakes completed writing the gun drill on the 14 Sept 44 and it was turned over to the C.I.G. C.S. of A (O) for approval and was duly approved after a few minor changes.

Coordination

Major E.A. Boyce from C.M.H.Q. reached the C.S. of A (O) on the 18 Sept 44 to take charge of Land Mattress preparations including:-

- (a) Drill
- (b) Range Tables
- (c) Deployment
- (d) Equipment Maintenance
- (e) Tactical Use

Meteor

It was foreseen that Meteor conditions were to play a big part in the launching of the rockets. Capt Rannie produced a ground surface wind machine which took four hours to erect and ten men to erect it. Major Boyce selected B.S.M. McAfee from the staff of the C.S. of A (O) to take charge of all meteor work in the Cadre. Lt. Col.

W.C. Harris solved the wind machine problem by producing a combination of two anemometers which proved very satisfactory.

Discipline

Lt. M.C. Reid & Lt. J. Briggs joined the L.S.M. Cadre on the 21st Sept 44 as two Gunnery experts. These two officers were largely responsible under the guidance of Major Royce for the production of Fire Discipline associated with the Land Mattress to-day.

ing Trials

On the 23rd Sept one equipment was taken to Beachy Head to fire and prove a very sketchy set of range tables. The projector was put in action twenty yards from the edge of the cliff & fired out into the channel. Fall of shot was recorded by a Survey Troop from the C.S. of a (C) & with these results B.S.M. McAfee amended the range tables.

onstration

A demonstration for many high ranking officers was conducted at Beachy Head on the 26 Sept 44. This was highly successful & the general feeling of everyone present was that the Land Mattress was destined to play a successful part in the execution of the war. It was a weapon with great possibilities.

For this demonstration two Meyer Dumore projectors were used, one was the first 32 barrel experimental model and the other, Model # 1 M.D.

ement Overseas

Lt W.S. Jackson was ordered to move with the latest M.D. projector with stores to # 1 C.C.O.D. Borden on the 26 Sept 44 where remaining stores were to be picked up. This officer was then to proceed overseas with all stores & meet the remainder of the Cadre; who were to proceed by Naval Dispatch boat; on the Continent. Lt W.S. Jackson accompanied by S/Sgt Holmes assembled the stores at Borden, the move for the remainder of the Cadre was cancelled & they reported instead to # 1 C.A.R.U. on 27 Sept 44 where arrangements were made to secure our own transport and proceed overseas as a self contained unit.

Seven drivers reported to Major Royce and 7 x 3 tonners, one jeep and one trailer were drawn from B.Q.D. on the 28 Sept 44. Our outlook in drivers & transport was not a happy one. Only two of the drivers could drive with much skill & the trucks developed many mechanical faults before we arrived back at 1800 hrs at # 1 C.A.R.U., however as many mechanics as could be secured swarmed over the vehicles and worked well into the night making them serviceable for the long trip we were to commence next morning. At 0300 hrs the last vehicle was loaded and ready. At the same hour the last modification to the projector (lifting handles) was completed. Co-operation was magnificent from everyone. If this was to be a prediction for the future our mission was to be a successful one.

At 0800 hrs on the 29 Sept 44 the L.S.M. Cadre including Major Royce B.A., Lt W.S. Jackson, Lt M.C. Reid, Lt J. Briggs and Capt R.J. Rennie from the T.L.G. C.M.H.Q. also B.S.M. McAfee, B.S.M. Hoakes, S/Sgt Holmes and S/Sgt McCarthy moved off from # 1 C.A.R.U. One vehicle was loaded with stores and towing a projector and the remaining 3 tonners were loaded with Rocket ammunition.

New drivers, new vehicles loaded with ammunition, it wasn't a happy outlook.

The L.S.M. Cadre reached Purfleet at 1445 hrs on the 29 Sept 44, all in order, some vehicles toured London enroute before reaching Purfleet due to the fact of new drivers, new vehicles developing slight faults & being delayed, only two maps & one D.R., however all vehicles converged on Purfleet at the same time.

Vehicles, equipment and personnel went aboard the SAMMONT at 0900 hrs on the 30 Sept 44. Major Kirkpatrick, from the T.L.G., joined the Cadre just previous to sailing at 1100 hrs.

ACTIVE SERVICE

At 1600 hours on the 2nd of Oct 44 we anchored off the coast of France at ARROMANCHE where we were destined to sit for eight days due to weather which made it impossible for off landing. Lectures during this time were dreamed up even down to having each man & officer related his past & proposed future history. Everyone including officers lived in the holds of the ship, they were filthy & were already bursting with vehicles of every description. Food ran short on the fifth day but fortunately an R.A.S.C. transport column were aboard, each vehicle loaded with tinned foods. Finally on the 10th of October at 1400 hrs, landing crafts drew alongside to commence unloading. Lt W.S. Jackson accompanied by S/Sgt McCarthy went ashore on the first craft to arrange a speedy departure from the transit Camp. The first vehicles ashore arrived in camp at 1159 hrs and unloading was completed at 0800 hrs on the 11th of October. Major Royce held an orders group at 1300 hrs and the L.S.M. Cadre was to proceed to Army H.Q. at Antwerp with all possible speed leaving at 1500 hrs 11th October.

ges - 14 Oct.44.

The L.S.M. Cadre arrived all in order at Army H.Q. at 1730 hrs on the 14th Oct. Major Royce reported to the B.R.A. and was told to proceed to the 112 L.A.A. Bty of the 6th L.A.A. Regt near Bruges at 0900 hrs 15th October.

After some difficulty in locating this Battery we arrived at 1500 hrs 15th Oct. The Battery had been waiting our arrival for the past week and we found them very elated over the fact that they had been chosen to use this "new weapon".

At a conference by Major Royce on the night of the 15th Oct it was decided that training would commence on the morning of the 17th Oct. Lt Reid N.C. was to charge of the officers & ables class, assisted by B.S.M. McAfee. Lt J Briggs i/c N.C.O's & Gunners class with the assistance of B.S.M. Noakes. Lt W.S. Jackson was to continue to be in charge of all stores & equipment and also to instruct in equipment and ammunition to both classes.

Only a very few officers & O.R's had had any previous training in Field Artillery which meant all ranks must learn the functions of the Director, Artillery Board and Dial Sight. This was not a difficult task as every member of the Battery was extremely interested in their new work & after a few "pep talks" by Major Royce the Battery as a whole were just as determined to make the Land Mattress a success as were the L.S.M. Cadre.

Many wrinkles in Fire Discipline were ironed out in the nightly conferences of the Cadre and on the 22nd of October at 1200 hrs the syllabus was completed by the Battery.

On 18th October eleven projectors 32 Barrel Meyer Dumore models, and one 30 barrel Tilley Stevens model plus all op. stores were delivered to the Battery position near Bruges.

Originally two Tilley Stevens models were to be delivered but one was damaged in unloading operations at Arromanche & was left there. All projectors required welding after the long trip. In every case the hinges connecting the "A" frame to the body of the projector had worked loose.

Major Kirkpatrick and Capt Rennie gave invaluable technical assistance. They solved such problems as to how we were to carry rocket ammunition with safety, various types of racks were made up & fitted into L.A.A. tractors and 60 cwt, until a safe and serviceable method was decided upon.

During the next three days the Battery was organized into three troops and issued all its Rocket equipment. A review of training was carried on, on the more important subjects.

Artillery Range
Burg Leopold - 26 Oct.44

On Oct 27 the Battery moved to Ghel where it was to conduct a firing practice on the BOURG LEOPOLD Artillery Range. A recce was made of the range and the Bty deployed there the following day. Lt. Reid, Lt Briggs & B.S.M. Noakes each took charge of a Troop & Lt. Jackson & B.S.M. McAfee took charge of the Bty Command Post. Individual Troops were fired with quite good success but due to deplorable

communications firing was very slow. The entire Battery was very impressed with their new weapon & were excited about its prospects and they were all of the same opinion that this was a weapon with which they felt they were taking a very active part in the war. Here was moral almost at its peak.

The following da 29th Oct 44 a demonstration was put on for the B.R.A. and a large number of Artillery Officers. Lt Col. W.C. Harris gave a talk on the characteristic and capabilities of the Land Mattress. That night the Bty returned to Ghent & Lt. Col. Harris and Major Royce proceeded to GHENT to receive orders from the C.C.R.A. 2nd Corps for an impending operation.

Walcheren - 30 Oct 44.

A recce party comprising Lt N.C. Reid, Lt J Briggs and Lt Jackson met Major Royce at BRESKENS on the 30th October & a recce of a gun area was carried out, our first in action. In the meantime the Battery moved to a concentration area at LEMBREKE arriving at 1600 hrs, 30th Oct. That evening an orders group was held & preparations were completed to occupy the position next day.

1. TACTICAL SITUATION

Walcheren Island was to be attacked from three sides. First by amphibious assault from BRESKENS into FLUSHING. Secondly an amphibious assault onto the western side of the Island & thirdly an attack from South Beveland across a narrow neck of land onto the eastern side of Island.

2. PART PLAYED BY ROCKET BTY

The 112th L.A.A. Bty (Rockets) were to support the attack on Flushing, D day was set for 1 Nov 44.

The gun position had been selected behind the dyke west of Fort Fredrick Hendrick (M.R.07002010) (21 N.E; 1:25,000) The Bty was to neutralize open top enemy ack-ack concrete gun positions whose fire could be brought to bear on our troops assaulting Flushing. These guns extended from M.R.0900 2520 to M.R. 09652500 (14 SW 1:25,000)

The Bty occupied the gun position on the morning of the 31st October. Ammunition had been dumped approximately 1000yds to the rear & during the afternoon & evening assembling the ammunition was done by all personnel available and then transported by the L.A.A. tractors forward to the gun position.

It was planned that instead of firing Battery salvos at the enemy gun positions, fire would first be put down by a troop salvo followed by gun salvos at three minute intervals until three Bty salvos had been fired. Each Troop was laid at a different point along the line of enemy guns.

At 0620 hrs on 1st Nov firing commenced and the firing programme was rigidly adhered to & completed on time. At 1200 hrs a tgt was received from the C.C.R.A. 2 Cdn Corps & it was decided by Lt. Col Harris to engage it with observed fire and to this purpose the top of a big lighthouse was occupied by Lt Col. Harris & Major Royce. This lighthouse was situated directly in front of the gun position, some forty yards or so & presented a perfect target for the enemy. No cable was laid but runners between the O.P. and B.C.P. were used instead. Ranging was opened with five rounds gun fire, a cardinal point correction was sent down & five more rounds were fired, a further correction was sent down with orders to fire the remaining rounds in the projector but the last correction necessitated a change from blue to red spoilers so a message was sent back asking if the O.P. could wait fifteen minutes while spoilers were changed, there was much fuming at the O.P. end, our own troops were nearly on the target. Observed fire was never attempted again.

Firing ceased at 1200 hrs and the Battery received orders to move back to its concentration area at Lembreke at 1000 hrs on the 2nd November.

3. CHANGES IN ORGANIZATION

There were no changes in organization during the period. The Battery consisted of three troops, two with four guns & the other with five guns.

4. STATE OF EQUIPMENT

The projectors were all brand new, and presented no problems.

5. PARTICULARS INCIDENTS OF INTEREST

Lieut Reid, acting G.P.O. of C Troop, had chosen a very fine gun position on the Recce, but was not too sure at the time whether the field was mined or not, however his plans were to prove it before his Troop occupied it the next day. The area was thick with mines and securing an area for deployment was difficult. The next day Lt Reid placed his troop on the right flank of the Battery, knowing the field to be clear of mines. This proved to be a very wise move because on the afternoon of the 1st November, the previously selected field received ten direct hits from heavy calibre enemy coastal guns, firing from 1500 yards in front of us. Five heavy shells landed 50 yards behind the position, but no shells landed right on the position. All during the morning 88 mm shells thudded into the dyke immediately in front. These shells were being fired at landing craft.

6. PERSONALITIES

Present at this first operation were Lt.Col. W.E. Harris, Lt.Col. Wardell and Lt.Col. Chater R.C.O.C. Lt.Col. Chater had been largely responsible for the speed with which we received our equipment. Some stores had not been ordered and those were produced by Lt.Col. Chater in a matter of hours instead of a matter of days or weeks by ordinary channels. Much credit goes to Lt.Col. Chater for the quality and quantity of equipment he produced when called upon at short notice, for the Land Mattress.

7. MORAL

To say the least, moral was exceedingly high, during and after the first operation. With everyone a great feeling of satisfaction was experienced with the "MATTRESS", if not a little frightening, from the firing end. The 112th L.A.A. Battery were extremely happy in their new work and expressed a very strong wish to continue in this work.

8. WEATHER

There were frequent rainstorms during the operation and the ground was very soft, but no difficulties were experienced in occupying the position other than through traffic congestion.

9. OTHER POINTS OF INTEREST

A policy had been laid down by the Cadre that the projectors would never fire over our own troops closer than 400 yards in front. This policy was shattered during the first operation due to unavoidable circumstances. The Land Mattress had been a last minute addition to the Artillery of 2 Corps, and there was only a limited space in which to deploy. Owing to mines and impassable ground, the only position available was twenty yards behind a Battery of Medium guns. However there was no other choice. Previous to firing the first salvo of rockets the medium guns had been firing. All medium gun detachments had been warned when the first salvo was to be fired, but after the salvo had been fired not a man was to be seen on the medium guns until one by one, their heads began to appear out of their slit trenches. These were English troops and they admitted that they had received the scare of their lives.

An interesting P.W. report was received from 2 Canadian Corps. Col. Reinhardt, the German garrison commander at Flushing, was captured and stated that he watched the Land Mattress being used and that the effects on battle-hardened men are no greater than from Artillery fire. However he admitted that many of his men were not of this type and that moral effect of this weapon was felt. He believed that this weapon was mainly used for this effect.

Moerdijk - 5 Nov 1944

1. TACTICAL SITUATION

The 1st Polish Armoured Division were holding a line surrounding a large enemy bridgehead south of the MAAS river. An attack was to be launched to wipe out this bridgehead, the approximate size being eight km deep and ten km wide.

2. PART PLAYED BY ROCKET BTY

The entire Battery moved from LEMBRIDGE to a dis P at Breda on the 5 November, arriving at Breda at 1400 hrs. Recce parties were met enroute by a rep from Div H.Q. and went forward to meet Major Royce at TIRHEISDEFF (M.R. 9322 4263 ref sheet 9 S.W. 1:25000). Gun positions were selected in the village of TIRHEISDEFF just east of the canal running north & south and the Battery was in action at 1800 hrs. Firing was cancelled for that night but the following morning, 6 November, commencing at first light 764 rounds were fired at various troop targets in enemy F.D.L's between 0730 & 0820 hrs., a further salvo was fired at midday.

By evening the enemy had withdrawn behind their concrete wall which runs for 3000 yards S.E. from Moerdijk & turns N.E. for 6000 yards up to the HOLLANDSCH DIEP, and to keep up with this move the Battery moved forward and occupied gun positions at DRIEN HOEFIJZERS (M.R. 89334429, 9 S.W. 1:25000) and were in action by 1800 hrs.

During the night 6/7 November six targets within the wall were ordered. At 2230 hrs three road targets in the S.W. corner were engaged and at 2400 hrs three other road targets were engaged along the southern boundary. Each salvo was a troop salvo with each troop laid on a different point. A complete Battery salvo had not as yet been fired on one point.

At 0930 hrs on the 8th November six troop salvos were fired into MOERDIJK to cover the breaching of the cement wall by S.P. 17 pounders. Typhoons were planned to come in later but were prevented by rainstorms. Two breaches were made, one was covered by enemy M.G. fire and a tank blew up on a mine in the other blocking the breach. A third was made but was too narrow for tanks to pass through but later was widened.

At "Z" hour 1230 hrs a Battery salvo of 382 rockets was fired into an area just beyond the two breaches to cover the advance of tanks and Infantry.

The remaining ammunition 216 rounds were fired into an area at the southern end of the two famous span bridges leading to Rotterdam, at 1500 hrs, where the Germans were mainly trying to escape across the river.

3. CHANGES IN ORGANIZATION

NIL

4. STATE OF EQUIPMENT

At the end of this operation only 9 projectors were in action. Two projectors had suffered burst tails destroying several barrels, in each but these were soon replaced. Two other projectors were suffering electrical faults but S/Sgt Holmes, our very efficient R.C.E.M.E. electrician soon put things right.

5. PARTICULAR INCIDENTS OF INTEREST

Insufficient time was allowed to prepare ammunition. 3366 rounds were dumped at TIRHEISDEFF and only about half this ammunition could be prepared by the gun crews. Major Benson, O.C. 112 L.A.A. Battery, gathered every last man of his Battery H.Q. about him, about twenty men, and worked all night of the 6/7 November to prepare and dump on the gun position all the remaining rounds. It was raining very very hard and the night was exceedingly dark, none of these men had assembled a rocket round before and their job was very difficult. Our firing programmes could not have been adhered to if these men had not done such a splendid job.

6. PERSONALITIES

Major Benson had no active part in controlling the fire in this

operation but he was definitely a man behind the scenes. It was said by his men that he assembled as many if not more rounds than any of them and much surprise was registered by the gun crews when he was seen unloading ammunition on the gun position. During the night considerable shelling was experienced around the gun area & around the area where ammunition was being prepared. By morning over 1500 rounds had been assembled & dumped on the gun position. The men could not grumble about hard work when they had an O.C. who had worked like he had.

7. MORAL

OWN TROOPS--: Most encouraging. Polish troops came in a never ending stream to see this new weapon which was causing so much damage to the Germans. The C.R.A. Polish Div stated their men wanted support every time they went in for an attack.

ENEMY TROOPS--: This is best judged by an instance reported to us by 1st Polish Div. It will be remembered that the Battery fired on a road target at 2400 hrs on the night of the 6/7 November. The Germans had sent a special party across the MAAS river to cover the final withdrawal. This party consisted of a Major, a Captain, two Lieutenants and 60 O.R.'s. This group was caught in the midnight target, the officers were not heard or seen again. Thirty O.R.'s were killed and the remainder left their well fortified positions and surrendered.

8. CIVILIAN POPULATION

This was the first operation in which we came in contact with civilians during firing.

Our first gun position was occupied in front of and between houses which were all occupied by civilians. After the first salvo was fired many occupants were seen rushing from their houses and running as fast as possible from the proximity of the gun position. There is no doubt we had scared these poor people half to death.

At our second gun position, alongside the main road, a very humorous episode took place. Just previous to firing, several civilians, also about six German prisoners were walking down the road which ran between Able and Baker troops. After the salvos had been fired, civilians and prisoners extracted themselves from the ditch, which was full of water, flanking the road. One civilian on being questioned, said it was the worst scare he had had & thought the end of the world had come.

Dutch civilians in KENENDERSGHE HOEK were on the receiving end of one of our targets. One said "At eight O'clock a noise like a big train roared down on us, there was a terrible crash and our house was gone and all the other to". Fortunately all civilians were underground but on examination later it was found that nearly every house was completely destroyed in this small village.

9. WEATHER & LOCALITY

The rain never ceased during the entire operation. The area was open and flat giving us no cover in which to conceal the flashes and smoke of the Battery.

10 POINTS OF INTEREST

The Polish Division took 400 prisoners during the operation and reckoned about 150 dead. They themselves had twelve killed.

The Polish C.R.A. praised the rockets highly. "Besides being accurate and destructive", he said, "its demoralisant les troupes ennemies autant qu'ils moralissent les nôtres"

Prisoners were interrogated by 1st Polish Div & Cdn Army and the following are examples of reports--:

1. The detonation heard from 300 yards away was comparable in blast effect to that of an H.E. shell about 15 cm.
2. The sound was accompanied by terrific blast & splintering effect
3. A bunker of section capacity, having a roof 1.5 cm thick was totally destroyed, although it did not receive a direct hit the blast produced a "bomb happy state" on the occupants, including

an M.O. causing them to surrender.

4. Some P.W's claimed that the moral effect was comparable to that of the terrible "Jabos" or fighter bomber (Typhoon) both of which command greater respect than Regt. Arty.

5. One lone apprehensive soldier said that the news of the new weapon used by Tomay had been bruited about within his unit. It currently was regarded as having a high content of very combustible and volatile liquid which was "known" to burn tanks and char the occupants.

The day after the operation finished, all members of the Cadre immediately set off to examine the target area. A section of Moerijk had all but been burnt out proving our rockets also had an incendiary effect. Only one dead civilian was found which was encouraging as we did not like firing into Dutch villages because of civilians. The examination came to an abrupt end when the Germans began to heavily shell the area. Lt Reid, Lt Briggs also both B.S.N's took cover with little satisfaction in a horribly wet ditch and Major Boyce and Lt. Jackson literally flew into a knocked out German tank. A very quick trip was made back to the gun position amongst a hail of scattered shells.

The Rocket Battery had now been in action twice operationally and had proved a success. The following letter was sent by the B.R.A. to General Crerar.

Letter:-

A/RCA/11-A-1
R.C.A. Branch
Main First Cdn Army
8 November 44.

MEMORANDUM to ARMY COMD

FROM B.R.A.

SUBJECT ROCKET PROJECTORS

1. Our new Rocket Battery has now been in action twice operationally and has carried out a demonstration once previous to going into ops.
2. All reports have been good as to accuracy, moral and lethal effect. During its last operation a P.W. reported that a rocket concentration landed in the middle of a group of reinforcements during a relief in the front line, that it caused many casualties and, in fact, survivors all surrendered, walking into our lines immediately.
3. The weapon is definitely an area weapon and it can be taken that a salvo from our present Bty of 12 equipments will completely neutralize an area approximately 800 x 800 yds when troops are in the open or in light field defences.
4. I feel in view of the limited amn, that this weapon should be retained for major operations and then used concentrated on one and to neutralize that area whilst our troops are advancing.
5. Many other uses could be found for this equipment, but I feel, owing to limited supply of amn, that they should be used solely for the role described in the previous para.
6. If it is accepted that the use described in para 4 is the only, or at any rate the primary use, I feel that two other batteries each of 12 equipments should be provided.
7. The extra equipments are required in order to produce more or less continuous fire by a sufficient number of equipments over a period of approx. one-half hour. Naturally it could be desirable to lay down fire for a longer time than this but this would entail the production of too many equipments.
8. With only twelve equipments as we have now, in order to get the maximum effect they must all be fired in the space of one or two minutes and it then takes 10 minutes to reload. With three lots of 12 equipments as soon as the first 12 are fired they could reload and while reloading the other two sets of 12 could be fired. Of course, this procedure could to my opinion this does not neutralize the area sufficiently.

9. So far as I know there are only two disadvantages to the use of rockets.

(a) The fact that supply of rockets might effect the supply of gun amm and I believe that this is not so.

(b) The smoke and the flash produced on firing is considerable and it was thought that it would draw heavy enemy fire. This has not happened during the operations in which the rockets have taken part so far and it is believed that probably because of dispersion in deployment it is difficult to get an accurate "fix" of the equipments.

10. In view of the above, it is recommended that we ask to have 24 more equipments produced, bringing our total up to 36 equipments.

11. If we increase the total number of equipments to 36 more amm is required and it is suggested that we ask for 15000 rockets per month. this would enable us to use the weapon for three major operations per month using all 36 equipments.

12. I am told by C.M.H.Q. representatives who state they have had their information from the Ministry of Supply, that the rockets and equipments can be produced without in any way affecting the supply of gun amm. My recommendations are only put forward in the belief that this statement is correct. If the supply of gun amm would be affected by the production of rockets, I am not in favour of the use of rockets at the present time.

13. I have been told that in fact there are in England nearly one million obsolete rockets, almost complete, for which there is no use at present unless we make use of them for Army Rocket Units. It is said they can be completed reasonably quickly, and that with the use of them our demand for 15000 rockets per month could easily be filled. The rockets referred to is the 3" A.A. Rocket, the components consisting of:-

(a) 3" 12lb tubular motor rocket.

(b) 3" parabel sided H.E. shell.

14. To sum up based on the assumption that the production of gun amm will not be affected by the supply of rockets, I would recommend as follows:-

(a) We ask C.M.H.Q. to arrange for the production of 24 more rocket equipments similar to those already supplied to First Cdn Army.

(b) That C.M.H.Q. be asked to arrange for the delivery of up to 15000 rockets per month to this theatre.

(c) That the Corps L.A.A. Regt be trained to operate all 36 equipments and be used operationally when rockets are required.

(d) That a temporary W.E. be authorized for the rocket Regt of 36 equipments. I suggest that this W.E. should be only sufficient to maintain the equipments and to instruct and control the fire of the same. I am prepared to submit proposed W.E. if my recommendations are approved.

(Hon. Brown Field) Brig

B.R.A. HQ First Cdn Army

Hon B / TMH

Light - 10 Nov 44

On the 10th Nov 44 the 112th Battery moved through Breda and Tilburg to Vught, and on the 19th of November the 112th Bty turned in all their rocket equipments and once more assumed their Anti-Aircraft role. They were disappointed that they must leave their rockets behind them and expressed a very strong desire to remain actively engaged with the Land Mattress. This unfortunately was not possible as only enough equipments & stores were available to equip & train one Battery and training of further Batteries must commence immediately.

On the 10th Nov 44 the 338 Bty from the 102nd L.A.A. Regt (English 1st British Corps) replaced the 112th Canadian Bty from 6th L.A.A. Regt.

2 Cdn Corps. On the 14th Nov. Major Royce was posted to the 19th Field Regt RCA and Major H.S. Stronach assumed command of the Land Mattress. The Cadre was enlarged with the arrival of B.S.M. West L.G. and S/Sgt Hemlin J. from 2 C.B.R.G. On the 18th Nov. Lt. Reid again took charge of the officers & aables class and Lt J. Briggs the M.C.O's & Gunners, training commenced on the 16th Nov. Lt. W.S. Jackson was detailed to British Corps as an L.G. with the purpose of explaining the functions and uses of the Land Mattress. All Divs in the Corps were visited as well as 12 British Corps and all Divs in the Corps. Two immediate requests were made for the Land Mattress, one by 3 British Div and the other by 15th Scottish Div. As the 15th Scottish were attacking Seigfried defences the Land Mattress was allocated to them and on Nov 31st the 338 Bty with their training completed came under command 15th Scottish Div.

10-Blerick - 1 Dec 44

1. DIVISIONAL PLAN

The Seigfried defences swept west of the MAAS river at VENLO and encircled the village of BLERICK which lay on the west bank of the river opposite VENLO. The 15th Scottish Div were to penetrate the defences and clear the enemy from the west bank of the river.

2. PART PLAYED BY THE ROCKET BATTERY

On Dec 1st 44 Lt. N.C. Reid the G.P.O. recced gun positions at MAAS-BREE which 338 L.A.A. Bty occupied the same day. Firing was to commence on Dec 3rd and on Dec 2nd the day was spent assembling ammunition and dumping it in the gun position.

On Dec 3rd two targets were engaged in the morning to cover the assault. These targets were enemy strong points taken from defence over-print maps & air cover. They were made up of slit trenches and what appeared to be light concrete cover. Only two salvos were fired and firing ceased at 1100 hrs & the guns were taken out of action and moved to an area one km to the rear.

3. CHANGES IN ORGANIZATION

Twelve projectors only were used making up three four gun troops.

4. POINTS OF INTEREST

The operation was called GUILDFORD and was entirely successful. The weather was good and no rain fell until after the operation. Shelling was light and scattered.

Three hours after the operation retaliation fire was directed against the gun position. Fortunately the Battery had left.

Interrogation of P.W's established the following facts.:

(a) That the density of projectiles is very much greater than with normal Arty concentration.

(b) That the rockets are more frightening than Arty because they cannot be heard until the last and the intensity gives the feeling of being smothered.

(c) That against the present projectiles fitted with an instantaneous fuze does little material damage though the effect on moral is considerable.

(d) That against troops in the open the effect is highly lethal.

The following message was received by the Battery.

HEADQUARTERS 12 COPS B.L.A.

4 Dec 1944

My Dear General--:

I would like to write and thank you for the part played by the 1st Cdn Rocket Projector Unit when it was operating with my Corps in the action just concluded to drive the enemy EAST of the MAAS opposite VENLO. They were a great help to us in making the initial break in to the defences of BLERICK and undoubtedly materially assisted in our being able to close these defences with comparatively light casualties.

I will be very much grateful if you can convey the thanks of 12 Corps to the Unit.

Yours Ever

(Signed) Neil Ritchie

Gen M.D. Crerar C.B. D.S.O.
HQ 1st Cdn Army.

B

7 Dec 1944

Dear Neil:-

I am indeed glad to learn that 1st Cdn Rocket Projector Unit recently "delivered the goods" to the satisfaction of 12 Corps and I will certainly pass on your thanks.

Yours

(signed) H.D.G. GREER

Lt Gen N.W. Ritchie C.B., C.B.E., D.S.O., M.C.
Commander 12 Corps B.L.A.

C

G-1-21/Ops
Main 1 Cdn Army
9 Dec 44.

G.Main 1 Brit. Corps
1 Cdn Rocket Projector Unit

I am directed to forward the attached copy of a letter received from the G.O.C. 12 Corps together with a copy of the reply sent to the G.O.C. in G 1 Cdn Army and to express the personal congratulations of the G.O.C. in G to the G.O. 338 L.A.A. Bty on this well deserved compliment.

(Signed) G.E. Beaumont Col
A/Chief of Staff

Tilburg Holland -4th Dec 44

During this latter operation our training school at Vught, consisting of two public schools, had been taken over by the H.Q. of the 4th Cdn Arm'd Div. Lt J. Briggs located an ex-Hitler Youth camp three km south of Tilburg & this was used as a base training camp by the Rocket Bty until April 1945.

Giltrath Germany 6th Dec 44

On the 6th of Dec Lt. Jackson was sent to 30 British Corps as L. O. An operation was planned by this corps & the Land mattress was requested. 30 Corps at this time were situated midway between Gittard & Maastricht in southern Holland, in the village of BREE.

On the 9th of December 1944 the 338 Bty moved to GILRATH, Germany coming under command 30 Corps. Lt Reid, G.P.O. recced gun positions but these were never occupied due to postponement of the operation on Dec 15th. The Bty lived in two brick factories 1000yds behind our own F.D.L's and there assembled 2500 rounds of rocket ammunition. Fortunately no shells or mortar bombs fell in the immediate area of the factories although some were much to close for comfort. This situation of confining the Bty & ammunition to a small space could not be avoided due to congestion of so much artillery & tanks in that area.

When the operation was cancelled we were presented with the problem of transporting 2500 rounds of assembled ammunition back to Tilburg. Our policy to the present time was to carry 32 rounds stacked in special racks in a L.A.A. tractor & all remaining ammunition to be carried in complete rounds boxes & when this was not possible the rounds were to be broken down into their various components namely, fuze, warhead, tail & fins and replaced in their respective containers. Only several hundred complete round boxes were available so it was decided to carry the rounds assembled. 128 rounds spaced between the layers with 1" board were carried by a 60 cwt. The ammunition was all transported without damage back to Tilburg and as this had proved successful all rounds were transported in this fashion hereafter.

Tilburg Holland 16th Dec 44

On the 20th Dec 44 the 338 L.A.A. Bty 102nd L.A.A. Regt were replaced by the 337 Bty of the same Regt. Training commenced on the 21st Dec. with Lt. J. Briggs i/c Officers & Ables classes and Lt. Reid i/c H.C.O.'s & Gunners. However their training ended abruptly on the night of 21st when they were ordered back immediately to their Aek-ack role with 1 British Corps. The Ardennes offensive by the Germans was gaining some ground for them, and trouble was imminent on our

own front. Intelligence told us that the enemy were preparing for a strong attack somewhere in the area Breda, Tilburg & paratroop landings could be expected.

The personnel of the Rocket Bty were ordered to move immediately into the Tilburg Garrison Area. Major Stronach was appointed O.C. Tilburg Garrison, Lt Reid, B.S.M. Hoakes & eight O.R.'s remained at the camp to destroy all equipments in the event of an attack and the remainder joined the mobile reserve under Lt Col. Cormack, C.O. 8th L.A.A. Regt. Lt. Jackson and B.S.M. West each having a section of men trained for two days with the mobile reserve in the tactical use of kangaroos.

The situation eased on the 28th Dec 44 and the Rocket personnel returned to camp and on the 29th Christmas Day celebrations were enjoyed by everyone.

NOTES IN ORGANIZATION

On the 23rd Dec 44 1 Ech Adm C 2/45 granted approval for the formation of 1st Cdn Rocket Unit R.C.A. under command Major R.S. Stronach on a field return basis wef 23 Dec 44. The W.E. comprised six Officers and 103 other ranks. Authority for an L.A.D. comprising one Officer & nineteen other ranks for attachment to 1st Cdn Rocket Unit, wef 23 Dec 44 was also received from 1 Ech Adm C. The 1st Cdn Rocket Unit later became known as 1st Cdn Rocket Regt & finally officially as 1st Cdn Rocket Bty which it will be called hereafter. Capt T Bond MC joined the Battery on 31 St Dec 44.

The 337 Bty once more came under command 1st Cdn Rocket Bty & recommended their training on the 2nd January 45 and completed training on the 10th of January 45.

pik - 5 Jan 1945

Two troops of 338 Bty reported to the Rocket Camp at 1300 hrs on the 5 Jan 45 and under direction of Lt Reid G.B.O., were outfitted with operational rocket equipment for an impending operation. The troops moved off at 1500 hrs to occupy gun positions.

1. BDE PLAN

The enemy were holding a bridgehead south of the MAAS River in the area KAPELSCHIE VEER E 096498. The 3 Pol Infantry Bde were to clear the enemy from the south side of the river.

2. PART PLAYED BY ROCKET BTY

The Bty were to support the Bde with three salvos. At H hour 0530 hrs on 6th Jan 45, a bty salvo was fired into a cluster of houses at D 096498 which was an enemy strong point. At 0600 hrs another Bty Salvo was fired on a communication centre and likely mortar area at E115512 and at 0630 hrs a troop salvo was fired at another communication & likely mortar area at E-096522. Cease fire was given at 0631 hrs and and by 0700 hrs all personnel & equipment were clear of the area.

3. CHANGES IN ORGANIZATION

Only two troops of four projectors each were used & the remaining four projectors were retained at the rocket camp so that training of the 337 Bty might not be interrupted.

4. STATE of equipment

Elevating gears & traversing gears were beginning to jam due to wear and tear but these were either replaced or repaired by RCENE.

The control boxes, it was now found, were not substantial enough. The face of the control panel had been made from a heavy cardboard & in many cases these had come loose & affected the switch. In some instances when the number one was resetting the switches on the projector several rockets would be discharged. Fortunately no harm was done to the number one apart from receiving a good scare, however this fault continued, despite all efforts of the RCENE to correct it, & the numbers one accustomed themselves to the premature discharge of a few rockets.

5. CIVILIAN POPULATION

The gun position was confined to a one hundred yard frontage along a railway track behind a large number of houses on the southern edge of town. When the guns were deployed guards had to be posted to keep the large number of civilians away although it may have been that they were more interested in our cigarettes than our guns.

Shortly after firing the first salvo at 0630 hrs a dozen civilians or so were seen to scamper hastily from their homes in fear of the guns they were all wearing night dress & presumably were intent on taking cover. Later many civilians were seen to leave town, going by our gun position. They had mistaken the roar of our rockets for an attack by the enemy but on assurance that all was well they returned home.

6. POINTS OF INTEREST

The attack was entirely successful. A previous attack without rocket support had failed and this Division, in view of their previous experience, made a strong claim for the attachment of the rockets. The 3rd Brit. Corps Division had applied for rocket support on the same day.

On 11 Jan 45 the 337 Bty proceeded to Lommel Artillery Ranges (M.R. sg 2800 HAINYCK #4 1:180,000) with two projectors. The Rocket Bty had received some incendiary and smoke rounds & as the ballistics differed from normal H.E. rounds it was decided to test them on the ranges. The incendiary rounds were found not to have sufficient incendiary content and time did not allow the firing of the smoke rounds.

The feelings expressed by the 337 & 338 Btys were similar to those of the 112th Bty. They were immensely impressed with the weapon & were a little over awed at its capabilities & its power.

stard - 13 Jan 1945

On the 13 January 45, Major Stronach received orders from the B.R.A. 1st Cdn Army that the 1st Cdn Rocket Bty with 337 Bty under command would support 12 Corps in the Sittard area. Lt Jackson proceeded immediately to 12 Corps as Liaison officer. Major Stronach & Capt Bond arrived at 12 Corps the following day and Lt J Briggs, C.P.O. brought the Bty down on the 14th Jan where it concentrated at Eysden (M.R. 567688 Leige #9 1:100,000). Major Stronach attended a conference at 52nd Div at 1000 hrs on the 15 Jan. While at Eysden all other ranks were billeted in private homes.

1. CORPS PLAN

In January 1945 a large enemy bulge still existed from ROERMOND south along the NAAS river to SITTARD and east to GUILLENKIRCHEN in Germany. The task of 12 Corps was to eliminate this bulge as far east as the ROER river & for this operation the 52 (1) Div, 7th Arm'd Div and the 43rd Div and 8 Bde were being committed.

2. PART PLAYED BY ROCKET BTY

The Rocket Bty were to support both 52 Div & 43 Div. D day was set at 18 Jan, H hour at 0630 hrs and on the 16 Jan the Bty occupied positions at K 743868 to support the 52nd Div attack. The time programme & targets were as follows:-

	TGT	M.R.	TIMING	DESCRIPTION
1	1	7206 7247	H-90	Built up area & fixed def.
	2	7156 7216	H-60	Heavily Def locality
	3	7360 7079	H-45	Def town
	4	7318 7195	H-15	Def locality
	5	7279 7147	H-	Def locality
	6	7555 7195	On Call	Center of Def town
	7	7760 7126	"	Center of Def town

Targets 1, 2, 3 & 5 were fired at times called for. # 4 was not fired. Targets 6 & 7 were fired at 0630 hrs & 1000 hrs respectively on the 19th Jan. 45.

On 22 Jan 45 the Bty came u/c 43 Div to support their phase of the attack. Gun positions were occupied at K 832642. No time programme was laid on. The salvos were to be notified depending on the progress of the

attack. The targets were:-

<u>TGT</u>	<u>M.R.</u>	<u>DESCRIPTION</u>
1	828709	Center of town
2	848703	" " "

Targets 1 was engaged on 22 Jan at 0700 hrs and target 2 was engaged at 0830 hrs 23 Jan 45. Cease fire was then given and the Battery returned to Tilburg the same day.

3. CHANGES IN ORGANIZATION

No direct change took place in the operation of the Rocket Bty but the 337 LAA Bty itself was new. This was their first operation. Lack of urgency was shown both by G.P.O's & gun detachments resulting in very slow drill.

4 STATE OF EQUIPMENT

On the last day of the operation for the Bty, 23 Jan, the batteries in all projectors were run down to the point when it was problematical as to whether there would be enough current to ignite the rockets. This illustrates the lesson that the maximum time these equipments can operate continuously is ten days. It is then necessary for the equipments to be out of action for 48 hrs in order to remove batteries, charge & replace them, the alternative being to carry spare batteries for each equipment.

5. WEATHER AND LOCALITY

Considerable snow was experienced during the operation and the weather was cold during the first days of the operation, however during the latter days of the operation it ^{changed} the fields a sea of soft mud & slush. Deployment became very slow.

6 POINTS OF INTEREST

Target 4 was not engaged for two reasons. Firstly there was a great variation in surface winds & the resultant changes in the correction of the moment necessitated spoiler changes at the last instant. Secondly, as pointed out previously there was a decided lack of urgency and drill times were not adhered to but during the latter salvos drill time improved to a great extent. Conditions were very miserable which probably accounted for lack of enthusiasm.

It was considered that the Bty was not employed to the best advantage in this operation. The Bty was initially in support of 52 (L) Div which was to attack NORTH against a narrow neck of enemy territory, (3000 metres wide) which was left after an attack EAST by 8 Arm'd Bde to the NORTH of 52nd Div F.D.L's. In this narrow neck under circumstances it was felt that no really formidable opposition should be met. On the other hand 7 Arm'd Div and 43 Inf Div were attacking, frontally, the outpost defences of the SEIGFRIED LINE it was submitted that the rockets could have been better employed with them.

The 1st Cdn Rocket Bty suffered its first casualty during this operation. S/Sgt McCarthy our RCENE armoured was wounded badly in the back when four medium calibre rounds burst beside the truck he was sleeping in. S/Sgt Holmes and a RCENE Cfn from the 337 Bty luckily were not touched despite the fact the vehicle was punctured full of holes.

Secret

A/R.C.A./1-1-7

B.R.A. First Cdn Army

29 Jan 45

As a result of experience gained in recent operations the following lessons on the improvement of rockets have been learned.

SELECTION of TARGETS

The main characteristic of the weapon is its power to produce a saturation of fire on an area target.

In some cases targets have been selected which do not take full advantage of this fact. For example, in a recent operation, the centre of a village was engaged when very little was known as to whether it was even occupied. It was later proved it was empty.

16 CONCENTRATION OF FIRE

At a mean fighting range of 7200 yds a Bty of 12 projectors will neutralize an area 250 yds x 250 yds. With one salvo (This represents the 50% zone of the equipment) To employ a lesser number will have the effect of achieving only a partial neutralization. This was borne out in an operation with 1 Polish Arm'd Div when two targets were engaged with a troop on each. In view of the present shortage of ammo and the very large 100% zone of the independent projector it is not considered that it is efficient to employ single projectors in a harrassing fire role.

CONSPICUOUSNESS OF SMOKE WHEN FIRING

When fired, rockets give off a considerable amount of smoke and flame. When retaliatory fire is anticipated Batteries should move shortly after firing. At Blerick during operation Guildford retaliation commenced some three hrs after the rockets had been fired. Fortunately the Bty had left.

In the light of the limited experience so far gained it would appear that all the original conceptions on the use of this weapon were correct.

iburg Rocket Camp-24 Jan 45

On the 24 Jan 337 Bty, 102 LAA Regt 1 British Corps were replaced by 30th Bty, 6th LAA Regt, 2 Cdn Corps. Training of 30th Bty did not commence until 29 Jan 1945.

On 13 Jan 1945 Lieut J.G.H. Lessard and 49 O.R's were taken on strength from 12 Bn G.B.R.G., this was the first large draft to arrive in the Bty to make up the W.E. A few days previous B.Q.M.S. Gagnon had arrived to take up his new duties as Bty Quartermaster. Also during the latter part of Jan 64 vehicles including 60 cwt's, LAA tractors, etc were received in the Bty.

On 31 January 1945 Lt W.N. Tripp commanding the Rocket L.A.D. Section joined the Bty. This was an important addition to the Bty as previous to the arrival of the L.A.D. all vehicles & equipment had to be taken to workshops and there was a considerable lapse of time before the work was completed.

As stated before 30th Bty commenced their training programme on the 29 Jan and the same night Major Stronach received orders that the Bty should be made available on the 31st for a demonstration shoot for the G.O.C. in C. Fortunately the demonstration was not held until the 3rd Feb 45 but still the Bty was prepared to fire on the 31st. Lt Reid had charge of the 30th Bty Officers & Ables class and Lt Briggs took charge of the N.C.O's & Gunners class. Lt Jackson with thirty vehicles left for OSTEND on the 31 Jan to pick up as much ammunition as could be carried by the vehicles & brought back to the Rocket Camp. 10,000 rounds were in OSTEND & every round had to be delivered to us as fast as possible as this was our ammunition allotment for the next & very important operation soon to take place.

On 1 Feb & again on 2nd Feb 30 Bty deployed to perform the demonstration for Gen Greiar but on both days the demonstration was cancelled. On 3rd Feb the demonstration was carried out.

1st Demonstration
G.O.C. in C 1 Cdn Army
Feb 1945

30 L.A.A. Bty deployed at 330480 (ref sheet S.Hertogenbosch 1:100,000) on the 3 Feb at 1430 hrs

1. OBJECT

To demonstrate the effectiveness of fire by a Rocket Bty.

2. TARGET

An area was selected in consultation with 1 British Corps that would satisfy the following requirements:-

- (a) An area that contained enemy troops.
- (b) An area that did NOT contain civilians
- (c) An area in which the ground pattern of the resultant explosions could be observed.

The western edge of HEDEL (E 287525 embodying all requirements was selected.

COURSE OF DEMONSTRATION

- (a) At 1450 A hrs photos of the target area prior to engagement were taken by a sortie flown by 661 Air O.P. Sqn.
- (b) At 1503 hrs the first salvo was fired. Fire had been held for 3 minutes to allow G.O.C. in C's plane to come into better position.
- (c) At 1510 hrs photos of the target area were taken to show the pattern after the first salvo. These were not very successful due to cloud conditions.
- (d) At 1516 hrs the second salvo was fired at the same target.
- (e) At 1520 hrs photos of the ground pattern were taken with excellent results.
- (f) At 1530 hrs the third and final salvo was fired with results similar to the second salvo.

RESULTS

- (a) Fire was brought down to bear on the area given to the G.O.C. indicating the accuracy of the equipment.
- (b) It was again demonstrated that 15 minutes between salvos is sufficient to allow for re-loading providing no change in targets area is required.
- (c) Compact pattern indicates a very concentrated lethal effect can be expected from this equipment against troops in the open or protected by light field works. It is estimated the area covered by 860 rounds fired in three salvos was within a 700 yd square.
- (d) The pilot observed a great flash from the gun area followed by smoke. No sky trail was observed and very small flashes in the target area but a considerable amount of black smoke followed.
- (e) The first salvo was not observed accurately by the A.O.E. pilot due to position of the aircraft and cloud conditions but the second and third salvos showed a remarkably consistent concentration and explosions were simultaneous.
- (d) In this demonstration only nine projectors were available & there were only approx. 860 rounds fired.

POINTS OF INTEREST

After the shoot Gen Crerar flew in low over the gun position & was seen to shake his hands over his head to the Bty as a signal of good shooting.

Lt Reid as C.P.O. had been chewing his nails, as if worrying, whether or not he would hit the target. 30 Bty had only three days to complete training previous to firing but the results were splendid.

Back at the Rocket Camp in Tilburg preparations were well under way for the forth coming operation. We all knew there was a operation a large one to, in the wind, but when & where was a top secret. Ten thousand rounds of rocket ammunition, dumped at the Rocket Camp were being assembled, at the rate of 2000 rounds a day, by approximately 280 men drawn from the 15(S) Div, 43 Div & 1 Polish Div. These men had never seen a round of rocket ammunition before but B.S.M. Noakes the Bty Sgt Major took them in hand, demonstrated how a round was assembled & told them to get busy. Consequently our ammunition drill, so carefully drawn up, was thrown to the winds but the rounds were prepared which was what was wanted.

On the 4 Feb 45 30 L.A.A. Bty rejoined their Regt and 337 Bty once more came under command our Bty the same day.

By the 6th Feb 45 all ammunition had been prepared and loaded on some seventy trucks, both R.C.A.S.C. and R.A.S.C.

The Bty moved out of camp at 0230 hrs on the morning of the 7th & proceeded east along Maple Leaf Up route, arriving at a Dis P 740553 (Sheet 5,1:1;:000) at 1130 hrs the same day. En route one R.A.S.C. vehicle carrying 128 rounds turned over & was demolished. Rockets were scattered in all directions along the highway but none exploded. Another vehicle was called, the rockets loaded and returned to the Rocket Camp. B.S.M. Hoakes, supervising the off-loading of the rockets at the camp found to his horror twelve rockets lacking both safety caps & collars and many other caps were cracked. These rounds had been transported fifty miles in this condition and only a slight knock on one stricker would probably have exploded the 128 rounds, it was a rather unnerving discovery.

Operation Veritable- 8 Feb 1945

1. CDN ARMY PLAN

Two Corps were to be committed in operation VERITABLE, the divisions being 2 Cdn Inf Div, 3rd Cdn Inf Div, 4 Cdn Arm'd Div, 3 British Div 15 (S) Div, 43 Inf Div, 51 (H) Div, 52 Mountain Div, 53 (W) Div, 11 Arm'd Div and Guards Arm'd Div. D day was set for 8 Feb 1945. The plan was to clear the enemy from all the ground west of the RHINE. Against us were three German Corps, one a Para Corps, one an Infantry Corps & one an Arm'd Corps, containing a total approx. 13 German Divisions. The Americans were commencing a large scale operation in the south and it was hoped that this offensive would draw some of the enemy divisions facing 1st Cdn Army away previous to operation VERITABLE being executed.

2 Cdn Div was to open the attack by capturing a triangle of ground in the GROSBEEK area. 15 (S) Div were to strike east to CLEVE, with 3 Cdn Div clearing along the bank of the RHINE on their left flank, and 51 (H) Div on their right flank striking through the southern position of the REICHWALD FOREST. 52 Mountain & 53 (W) Divs were to punch south east in the direction of GOCH. 43 Inf Div were to exploit south from CLEVE through the CLEVE FOREST and gain all high ground overlooking GOCH. This was the end of phase one.

In phase two 4 Cdn Arm'd Div, 11 Arm'd Div and Guards Arm'd Div were concentrated en masse in the eastern portion of the REICHWALD FOREST and the area south of CLEVE, and were to deliver a right hook to the enemy by striking south and then east to the Rhine River crossing at WESEL.

4 Cdn Div were to aim for the gap in the HOCHWALD FOREST with 11 Arm'd & Guards Arm'd swinging east around the bottom of the forest & the 11 Arm'd to seize the high ground east of the forest and the Guards to finish up on the RHINE at the Ferry Crossing of XANTEN - WESEL.

3 British Div, 51 (H) Div, 52 Mountain Div & 53 (W) Div were to surge south & link up with the Americans driving north, the Americans would then turn east & link up with our Armour on the RHINE at WESEL.

The 2 Cdn Div plan called for a drive south-east from CLEVE through CALCAR down through the northern portion of the HOCHWALD FOREST. 43 Div were to drive north then 2 Cdn Div clear the west bank of the RHINE to XANTEN.

After the clearing of the HOCHWALD the 2nd Cdn Inf Div were to swing east and attack Staatsforest, 1500 yds south of Xanten, from the north, the main plan being to link up with the 4 Cdn Arm'd Div, who were to drive through the gap in the HOCHWALD then due east south of the Staatsforest towards the Rhine crossing at Wesel. 43 Div were to take Xanten and follow up this by clearing south along the west bank of the Rhine to Wesel. This plan was carried out and a link up with the Americans effected south of the WESEL Crossing.

2. PART PLAYED BY ROCKET BTY

The Rocket Bty fired from six different positions in support of the following seven operations.

DATE	OPERATION	NO of TGTS	RDS FIRED
1. 8 Feb 1945	Preliminary Bombardment	13	4000
2. 15 Feb 1945	43 Div to capture Forest Cleve	4	2400
3. 16 Feb 1945	51 Div to capture Asperden & Hervorst	2	2000
4. 18 Feb 45	15(S) Div to capture Goch	1	350

	OPERATION	NO of TOTS	RDS FIRED
Feb 1945	2 Cdn Div to capture high ground (0047) op "BLOCKBUSTER"	2	1500
28 Feb 1945	4 Cdn Arm'd Div to advance along rly south of Hochwald Forest	8	2400
7 8 Mar 1945	2 Cdn Div to capture KANTEN	3	650

1. PRELIMINARY BOMBARDMENT

The thirteen targets engaged on D day (8 Feb) formed part of the preliminary defensive positions. Seven of the targets were engaged before and the remainder after, H hour.

TGT NO	M.R.	TIME ENGAGED	SALVOS	DESCRIPTION
1044	767522	0500	1	Tracks & weapon pits
1050	772525	0530	1	Town, weapon pit
1033	764518	0700	1	" " "
1034	775575	0800	1	Trenches & weapon pits
1077	779543	0830	1	Weapon Pits
1124	784568	0900	1	Trenches
1063	789538	1000	1	Defended village & Bn HQ
1101	788559	1030	1	Mortar Area
1069	802531	1100	1	Defended village
1055	781527	1130	1	Trenches, weapon pits
1084	798542	1200	1	" " "
1068	802531	1230	1	Defended village
1108	808558	1300	1	Neblerwerfer Posn. and defended town of KRANNENBURG

These targets were compiled by R.A. 30 Corps from targets submitted by R.A.'s of 15 (S) Div, 51 (H) Div & 53 (W) Div. These three divisions chose the targets from defence overprint maps, air recce and information supplied by 2 & 3 Cdn Div patrols and ground recce. All targets were engaged on time.

On the completion of this programme the Bty was put in 30 Corps reserve and did not move or fire again until 15 Feb.

2. 43 DIV TO CAPTURE CLEVE FOREST

The Bty moved during the later afternoon 14 Feb and occupied positions at 856504 (Q1 1:100,000) At 2030 hrs target information was received from Capt Bond, L.O. at 43 Div. H hour was set at 0430 hrs the same day. The task given was to neutralize as completely as possible the whole of the wooded area with no rounds to fall outside of the wood boundary, using eight salvos.

Four targets were selected in the woods these were:-

TGT NO	M.R.	TIME FIRED	AMN
41	927498	0645	1 Salvo
42	426493	0700	"
43	921494	0715	" "
44	922499	0745	" "
41	927498	1005	" " "
41	927498	1020	" "
41	927498	1029	" "
41	927498	1530	" "

It was proposed to do a "milk round" twice as quickly as possible firing the right salvo in 1 hr 45 minutes. This attack was unsuccessful in its initial stages and as a result the full neutralization programme on FOREST CLEVE as originally planned was not called for. The remaining four salvos were put on call & were fired at the times shown at the N.E. corner of the wood. 43 Div did not secure the woods and the real effectiveness could not be assessed, however it was felt that the woods were only partially neutralized. The woods were held by an unknown enemy strength and was used the day previous as a F.U.P. for an enemy counter-attack.

3. 51 (H) Div. to capture ASPERDEN AND HERVORST

The Bty. was ordered to support an evening attack by 51 (H) Div., by neutralizing as completely as possible the two final objectives, Asperden (8745) and Hervorst (8943). This was to be achieved by firing three salvos on each area as quickly as possible and as late as possible before the infantry attacked. The targets were to be fired on 30 minutes notice with 1½ hrs. between targets. Targets and times engaged were:-

<u>Tgt. No.</u>	<u>M.R.</u>	<u>Salvos</u>	<u>Time</u>	<u>Description</u>
46	880452	3	2205 2220 2235	Fortified, defended village of ASPERDEN.
49	894458	3	2330 2345 2400	Fortified, defended village of HERVORST.

These targets were fired at the times asked for, although only seven minutes warning was possible for the initial salvo. No difficulty was experienced in firing as the guns had been laid and waiting since 2100 hrs., with the changes in surface winds and meteor being applied every half hour. Spoilers had been prepared and fitted in advance as the target range fell in the middle of the blue spoiler range.

The neutralization was highly successful and reports stated that both objectives were easily taken and there was little fight left in the enemy.

4. 15 (S) Div. TO CAPTURE GOCH

On 16 Feb. a gun position was occupied by the Bty. at 893493 (Q1 1:100,000) in support of 15 (S) Div. who were attacking Goch, a very strong and defended town in the Seigfried Line. However after firing one salvo in the center of the town, a report from Div. HQ stated our troops were already in the town after a quick break-through and we were to cease fire. No reports were received of shelling our own troops although they were undoubtedly very close to our target and well within the 100% zone.

5. 2 CDN DIV OP. "BLOCKBUSTERS"

The Rocket Bty. moved at 1600 hrs 25 Feb 45 and deployed at 944483 (Q1 1:100,000) to support 2 Cdn Inf Div in their attack to capture the high ground in map squares 0048 and 0147 (Q1 100,000) his objective lay 2000metres due south of CALCAR.

The task of the Bty. was to neutralize all the high ground in squares 0048 and 0147. Two targets were selected on the high ground and a total of five salvos were to be fired.

<u>Tgt. No.</u>	<u>M.R.</u>	<u>Times Fired</u>	<u>Salvos</u>
1	009481	0430 0441 0450	3
2	014475	0502 0519	2

H hour was set at 0430 hrs., 26 Feb. 45. Firing was to commence at H hour and to cease at H plus 50 with three salvos to be fired on the first target and two salvos on the second target. No further ammunition was available, this being all that was left of 10,000 rd/

further ammunition was to be delivered to the gun position, but did not arrive until the following day.

In this attack the infantry was held up on the start line and as a result, did not reach their objective at the planned time. Although the objective was taken, the lapse of time between rocket neutralization and entry of the infantry, prevented the maximum benefit being obtained from the rockets. An inspection of the targets later, proved the area was well and truly saturated.

6. 4 CDN. ARMD. DIV. TO ADVANCE ALONG RAILWAY SOUTH OF HOCHWALD FOREST.

The Rocket Bty. moved during the afternoon of 27 Feb. 45 and deployed in the area 990455 (Q1 1: 100,000) to engage the area HOCHWALD FOREST. The rockets were employed to engage a particular area from which an unsuccessful enemy counter attack had been launched about an hour earlier and also the neutralizing of enemy gun positions within the forest.

No firing was carried out from this position and the Battery moved forward to 001443 (Q1 1: 100,000) at midday 28 Feb 45 to support an attack by 4 Div along the line of the railway south of the HOCHWALD FOREST. This area was also considered as a very likely forming-up area for an enemy counter attack.

Six targets were selected in an area not completely covered by the 4 Div. fire plan.

<u>Tgt. No.</u>	<u>M.R.</u>	<u>TIME FIRED</u>	<u>DESCRIPTION</u>
1	054412	1527	F.U.P.
2	054410	1538	F.U.P.
3	054407	1551	F.U.P.
4	054405	1605	F.U.P.
5	054402	1618	F.U.P.
6	054400	1629	F.U.P.
7	067469	1759	Gun Area, Weapon Pits
8	059452	1814	Concentration Area.

The enemy had put in a strong counter attack from this area at 1500 hrs. on the 28 Feb but after very heavy fighting the enemy were driven back. From Intelligence reports the enemy were planning a similar attack the following day in greater strength. Six quick salvos, a total of 2160 rounds, a weight of approximately 60 tons, were dumped along the line of the enemy F.U.P. in 62 minutes. The suspected attack never took place.

7. 2 CDN DIV TO CAPTURE XANTEN

The Bty. moved at 1030 hrs., 6 Mar 45 to support an attack by 2 Cdn Div on Xanten. 'Bty. Ready' was reported at 1800 hrs. on completion of the occupation of the gun position at 059391 (Q1 1: 100,000)

The Rocket Bty were to neutralize a wooded area containing enemy infantry, with anti-tank, S.P. Guns and some tank support. Three points were picked, and a troop, concentrated, laid on each. Two salvos were fired by each troop.

<u>Tgt. No.</u>	<u>M.R.</u>	<u>TIME FIRED</u>	<u>SALVO</u>
3	099394	0642 and 0654	2
4	107395	0642 and 0654	2
5	106394	0642 and 0654	2

H hour was set at 0530 hrs on the 8 Mar 45. All salvos were fired T.O.T. at the above mentioned times.

The attack by 2 Cdn Div failed to go according to plan with the result that the area neutralized by rockets was not reached until the following day.

All available rocket ammunition in the European Theatre had been expended so that no further support could be given 2 Cdn Div in their attack on the following day.

3. CHANGES IN ORGANIZATION

For the operation one troop from 338 Bty was attached to 337 Bty so that all gun detachments might be maintained at 1 Sgt & 8 O.R.'s. This is the first time gun detachments were maintained at full strength & consequently the lengthy programme was completed without failure.

4. STATE OF EQUIPMENT DURING PERIOD

The continued failure of elevating & traversing gears was experienced during the operation. The L.A.D. had to be continually repairing or replacing these gears. Shorts circuits in the electrical system were becoming common and in many instances when the brass slug switch was plugged into the end of the firing cable a short circuit occurred causing a few rockets to be discharged dependant on the time it took the firing number to pull the plug switch free of the firing cable. The projector was not intended to be a long life weapon & consequently did not possess the stability of the ordinary gun however these Meyer DUMORE equipments had stood up well in spite of the wear & tear they had been subjected to.

5. PARTICULARS INCIDENTS OF INTEREST

On the 16 Feb, General Crerar stopped at the gun position. He chatted with Capt H Geddes of the 337 Bty for a few minutes & congratulated the Bty on the splendid work they were doing.

On the 25 Feb, Lt Col. Denning from the War Office paid a visit to the Bty & remained two days to observe the Bty in operation.

On one occasion the equipments were loaded & fired in seven minutes as against a normal ten to twelve minutes. This was credited to increase experience of personnel & also time saved by the use of the new Mk III motor with its plug in tail connection.

6 STATE OF MORAL

On examination of the time programmes it will be seen that in many cases a strenuous programme was ordered & the fact that they were met without failure tends to prove the high state of moral of the Bty. Heavy, speedy work was required & received. There was a general feeling of disappointment when all available ammunition had been expended. Continuation of operations would have been gladly accepted instead of returning to Tilburg.

7 WEATHER & LOCALITY

Throughout the operation the weather remained quite favourable with only four or five heavy all day rains being experienced. There was a certain amount of surface mist which proved to be a cover for the Bty. Most of the gun positions were occupied in wooded areas but the last gun position, in the village of LABBECK, recced initially by Capt T Bond M.C. was in very open ground on a forward slope. It proved to be the best area which was occupied by the Bty but the tactical situation was queried when our own M.G.'s dug in well behind us, chattered for 24 hrs prior to our firing. A company of infantry were dug in 500 yds in front of the Bty position.

8 POINTS OF INTEREST

At 2200 hrs on the 9 Feb enemy planes appeared overhead & dropped several bombs within 200 yds of the gun position. An intense A.A. Barrage was put up but no planes were seen to come down. Again on the 10th Feb 45 at 0200 hrs planes flew over the gun area, no bombs were dropped & the planes were driven off by a heavy A.A. barrage.

Although on D day the Bty fired almost continuously from 0500 hrs to 1300 hrs & subsequently fired twice in three days from one position at no time was enemy shelling such as to give reason to believe that the Bty position had been located & that counter action was being taken by the enemy. Enemy shelling was only moderate. On one occasion shell fragments penetrated a few barrels of one projector but the barrels were replaced in short order by L.A.D.

Only one rocket burst in 13,300 rounds. The tail burst some 50 feet from the projector, the tail became detached from the head and was recovered and showed quite clearly that it was the motor that had

failed. The head carried on and was not recovered & was believed not to have detonated. It is pointed out that expected premature in motors was one in every ten thousand and this was the second in over twenty thousand.

Lt W.N. Tripp leading his L.A.D. to the last position occupied found himself on a wrong road but decided to carry on east of SONS-BECK & then swing north west back to the position. The night was very black & Lt Tripp before reaching the position passed out through & back into our own F.D.L's.

The O.C., Bty Capt & one Lt from the 27 LAA Regt 30 Corps RA., were att to the Bty from 4 March to 8 March. Their Bty was delegated as the Rocket Bty of 30 Corps & these Officers were gaining experience in the operations of a Rocket Bty.

Two letters describing the Infantry side of our rockets are as follows/;

9 Mar 45

TO B.R.A.,
1 Cdn Army

FROM Major D.F. Callander, M.C.
Coy Comd 5th Bn Q.O. Cameron Highlanders

SUBJECT:- ROCKET BATTERIES

I have had experience of the Rocket Battery firing, both from a static line position and during a night attack. Whilst in defence and on a recce. I have observed the Mattress come down on a German position about one thousand yards in front of me. It came down almost simultaneously, starting from right to left and covering a distance of about 500 yds. I did not hear a projectile fired and the first indication of them was the first explosion. In my personal opinion it seemed to have a devastating effect and covered the target in smoke and dirt. A mortar which had been firing did not fire again. The moral effect on enemy infantry would be very great indeed.

My company attacked the north end of Asperden at night under an artillery barrage with mattress timed to fire during this barrage. Owing to various circumstances we were very late on to our objective and the mattress had fired possibly when we were one hour's distance away. My general impression however, is that it is a magnificent weapon for an area shoot and I am certain it was one of the chief factors in keeping the enemy infantry underground whilst we approached the objective. We took many prisoners all of which were still in their cellars. My company would definitely like mattress fire support for any set piece attack they do.

The German "Moaning Minnie" detrimental effect on our infantry, keeping them to the ground but I should imagine the mattress has a far greater effect on enemy infantry.

D.F. Callander Major

Coy Comd 5th Q.O. Cameron Highlanders

SUBJECT EFFECT OF ROCKET CONCENTRATION

As a result of experience when this Bn took the village of Asperden, I have the following observations to make.

1. The village was partially demolished. Only a few houses were standing, and these were badly scarred. The few remaining Germans were very cowed and sheltering in ditches. There was no opposition what so ever.
2. Reports from prisoners taken showed that the moral effect of the "mattress" was very great.
3. The Bn entered Asperden at midnight and no enemy shelling took place until 1100 hrs the next morning.
4. It must be borne in mind that these "mattresses" are put down in conjunction with a heavy artillery bombardment and that the village had also been typhooned.
5. I am of the opinion that from the infantry's point of view the use of rocket concentration is of great assistance.

Field
10 Mar /45

J.C. Powell Major
O.C. 5th Seaforth

On the 12 March 1945 victory west of the RHINE was achieved by the tireless effort of all Divisions fighting under 1 Cdn Army Command.

On the 24 Feb 1945 nine officers including Major Lee and twelve O.R's from the 364 Bty 112 L.A.A. Regt 12 Bn Corps arrived at the Tilburg Rocket Camp to be given one weeks training in Rockets. They were taken in hand by Lt N.C. Reid who decided that only a weeks training in directors, Arty boards and fire discipline was advisable at that time. B.S.M. West & Hemlin assisted on the course & later were attached to the 364 Bty 12 Br Corps for two weeks to train the remaining O.R's.

On the return of the Bty from operation VERITABLE Major Stronach reorganized the Bty placing Lt Briggs as B.R.Q. Subltorn replaced a few days later by Lt Heighes when Lt Briggs returned to Canada on rotation leave, Lt Jackson Able Troop, Lt Lessard Baker Troop and Lt Reid Charlie Troop. Troop Sgt Majors were BSM West Able troop, BSM McAfee Baker Troop and BSM Hemlin Charlie Troop. Noakes still as Bty Sgt Major.

30 Bty from the 6th L.A.A. regt arrived at camp on the 13th March for further training, interrupted previously by the last operation. Lt Reid was again to instruct the Officers & Ables class and Lt Lessard assisted by B.S.M. McAfee the O.R's class. Lt Jackson had been warned to leave his troop to 337 Bty who were soon to take part in another operation.

Twelve new Tilley Stevens projectors were received by the Bty on the 18 March 45. Two improvements were, the dial sight, sight clino was now mounted on the left side & the top traverse had been increased to twenty degrees as compared with nine degrees on the old equipment. The projectors were handed over to 337 Bty in exchange for their old projectors.

On the 21 March 45 after several recesses made by Major Stronach Williams O.C. 337 Bty and Lt Jackson C.P.O. the Bty moved to AFFERDEN Germany E 8038 to pick up 3584 rounds of ammunition previously assembled by a L.A.A. Bty from 30 Corps. The Bty moved on and concentrated two Km north of UDEM.

1 DIVISIONAL PLAN -Op PLUNDER

The 51(H) Div were to cross the RHINE at REES and drive north west into Germany. 15(S) Div were to cross at WESEL and a Paratroop and Airborne drop was to be made east of the RHINE midway between these two Divisions.

2. PART PLAYED BY ROCKET BTY

The Bty was to support 51 (H) Div in their crossing. D day was on the 24 March 45 but H hour for the initial assault was 2100 hrs on the 23 March 45. The first gun position chosen (M.R. A042498) was under enemy observation & this necessitated the ammunition being dumped during the night of the 22/23 March 45. A very heavy chemical smoke screen had been keeping the answer to a great secret for the past few weeks but the last few days preceding D day saw a change of wind in the enemys favour & the smoke was called off, as it was hampering preparations, excepting for short periods of time. On D-1 no smoke was laid. At 1430 hrs on D-1 the Bty occupied the chosen position, a completely wide open field with not even a tree for cover, we wondered if the enemy had any criticisms about our deployment drill.

The first eight targets were received from the C.R.A. 51 (H) Div with instructions as to timings.

<u>TGT</u>	<u>M.R.</u>	<u>TIMES & DATES</u>	<u>SALVO</u>
1	035547	2020 - 23rd March	1
2	061531	2100 - 23rd March	2
3		2045	
4	064542	2140 - 23rd March	1
5	053542	2335 - 23rd March	1
	080536	0225 - 24 March	2
		0245	
6	071560	0703 - 24th March	1
7	083553	0825 - 24th March	1
8	083555	2245	
		2300 - 24th March	2

	<u>M.R.</u>	<u>TIME AND DATE</u>	<u>SALVO</u>
<u>TOT</u>	093540	0128 25 March	
9		0145	2
10	090563	2200 25 March	1
11	095567	2215 25 March	1
12	096568	0150 26 March	1
13	093565	2050 26 March	1
14	099573	2200 26 March	1
15	142632	2010 29 March	1
16	140637	2030 29 March	1

The remaining eight targets were obtained as the advance went forward. All targets consisted of either built up areas or defence works in woods, along railway embankments, fields etc. All targets time were met with ease.

After firing eight targets from this position the Bty. moved forward and occupied another position at A 063509 at 1600 hrs. on the 25 March 45, and from here three more targets were engaged using four salvos. On the night 24-25 March 45, 2416 rounds of assembled ammunition were picked up at AFFERDEN.

At 1000 hrs on the 29 Mar 45 the Bty crossed the Rhine and occupied gun positions south of ISSELSBURG at M.R. 112585 (BOCHALT P.1:100,000). Two targets were engaged the same evening which brought the participation of the Rocket Bty in operation PLUNDER to an end.

2. STATE OF EQUIPMENT

Twelve new Tilling Stevens rocket projectors No 6 Mk 1 were used in this operation. Fault and steps taken to remedy them are:-

(a) The baffle plate supporting the barrels at the rear buckled in every case and allowed the barrels to slide back up to one inch. This buckling was attributed both to strain while firing and equipments being loaded at too high an elevation allowing the rounds to hit the stop bar with too much force. It was decided to load the projectors at 25 degrees and much care was to be taken in order to ensure the projectors staying in action. The demand on rockets was so pressing that welding strips had to be put off until a later date

(b) The dial sight bracket had two faults

i.. It was so situated that only 180 degrees vision could be obtained and was remedied by unit fitters raising the carrier level with the top of the barrel group.

ii. The cross leveling slot was not large enough to allow full cross levelling at full traverse. A larger slot was cut.

(c) The new two pin tail adapters had been carelessly assembled at the factory; in nearly every case the connections did not fit vertically causing a delay in night firing. Adapters, 360 of them, were dismantled by the unit fitters and the connections put vertical.

Actual unservicable rounds totaled only about one per two hundred rounds but with every salvo of 360 rounds there were about twenty-five misfires due to tails being blown off by the blast of adjacent rounds. Pigtails were too long and had to be knotted but still the gases which escape at the rate of 4000 miles per hour from the tail of the rocket, blew out some pigtails. Thirteen salvos could always be obtained from the original total of twelve salvos.

3. PARTICULAR POINTS OF INTEREST

A very serious accident occurred on the 29 March at 1330 hrs. Cnr. Knezovitch W. from Vancouver, was killed when his three ton truck, containing fifteen warheads blew up. All but one warhead exploded and it was picked up fifty yards away, badly pitted by shell fragments. His vehicle was completely demolished and some parts were blown over a wide area while the remainder of the vehicle was destroyed by fire. Cnr. Graig from London Ontario, was very seriously injured, when shell fragments and large pieces of adapter penetrated the front of his vehicle, hitting Craig in the chest and arms. He died a week later of his wounds. An English D.R. was decapitated and an English engineer, standing forty yards away, was very seriously injured by flying fragments and was not expected to live. Cnr. Holmes, driving in the same convey, narrowly

escaped death when a large piece of adapter over two inches square brushed his head and pierced the back of the cab.

4. PERSONALITIES

Gnr Davey J.C. from Charlotte Town P.E.I. was commended on his quick thinking and no thought of danger to himself when he dashed fifty yards from his vehicle to the blazing vehicle and pulled Knezovich free. Small arms ammunition was exploding in the cab and the whole vehicle and surrounding ground was a blazing mass. But for Davey, Knezovich would have burnt with his vehicle, it was not known until later that death was instantaneous.

5. MORAL

Moral was very good during the operation. This was an operation in which everyone was glad to be on the spot and each gun crew was quite proud of its new projector. Everyone was a little disappointed that the chase of the enemy into the heart of Germany could not be continued by the Bty.

6. WEATHER

The weather generally was excellent, very little rain fell. This was fortunate as wet weather would have made the fields very soft.

7. POINTS OF INTEREST

Shelling and mortaring was extremely heavy at times but the Bty was extremely lucky in that no personnel or equipment were casualties. The enemy were very active with airburst shelling necessitating the wearing of steel helmets all the time and "moaning minnies" paid four visits, before the operation started, to the Bty Command Post, area. At the second Bty position, near the river bank, where the Engineers were bridging the RHINE under very heavy shell fire, German planes were engaged with rifle and M.G. fire by the Bty. Some of the bombs, aimed at the bridge, fell wide & landed sometimes only 80 yds in front of the gun positions. This was an extremely unhealthy position but as usual the Bty seemed to be gifted with the luck of the Irish.

A spectacular sight indeed was the Airborne operation. The entire Bty saw planes & their gliders flying overhead in a seemingly never ending stream & then the tugs breaking loose leaving the gliders on their own. One Hamilcar glider broke loose prematurely & glided down to a very smooth landing near our position. One tug and all the occupants suffered a quick death when it turned completely over & executed a vertical dive to earth.

then - 1st April 45

1. DIV PLAN

The 49th British Div in 1 Cdn Corps were to clear the Island between NIJMEGEN and ARNHEM followed by an attack across the ISSEL river to clear ARNHEM & then exploit west & north west.

2. PART PLAYED BY ROCKET BTY

1st April 45 found the Bty deployed at 711685 (sheet 5,1:100,000) where two salvos were to be fired in support of 49 Div but due to the light opposition the attack went much faster than anticipated & only one salvo, to touch the attack off was fired, at 0600 hrs on the 2 Apr. 45 at the outskirts of a defended village at 766656. The whole area was interwoven with trenches, weapon pits & wire which the enemy had had all winter to prepare.

On April 11th 45 the Bty moved north on the Island to 723752 from where it was to engage targets commencing on D day, 12 April 45, H hour 2240 hrs in support of 49 Div in their assault across the ISSEL RIVER & the subsequent clearing of ARNHEM.

For this attack another Rocket Bty was in operation. The 338 Bty with Lt Reid as C.F.O. were equipped with the twelve old Meyer Dumore equipments & occupied a position at 724729 on the 11th April 45. Both Btys came under the R.H.Q. of 102 L.A.A. Regt instead of Major Stronach as originally planned.

Seventeen targets were received from the 49 Div C.R.A. Time programme and targets for 337 Bty were:-

TGT NO	M.R.	TIMES	SALVO
1	7558 7646	2100 - 12 Apr 45	1
2	7603 7662	2130 - 12 Apr 45	1
3	7727 7623	2200 - 12 Apr 45	1
4	7723 7599	2230 - 12 Apr 45	1
5	7612 7893	1148 - 13 Apr 45	1
6	7590 7990	2021 - 13 Apr 45	1
7	7568 8054	2103 - 13 Apr 45	1
8	7235 7804	1040 - 14 Apr 45	1
9	7221 7908	1431 - 14 Apr 45	1
10	7815 8030	0600 - 16 Apr 45	1

Targets for 338 Bty were:-

TGT NO	M.R.	TIMES	SALVO
1.	7520 7662	2130 - 12 Apr	1
2	7657 7729	2200 - 12 Apr	1
3	7759 7645	2230 - 12 Apr	2
4	7710 7826	2100 - 13 Apr	1
5	7189 7789	1050 - 14 Apr	1
6	7221 7908	1415 - 14 Apr	1
7	7377 7827	0600 - 16 Apr	1

Reference sheet # 5, 1:100,000.

No trouble was experienced by either Bty in meeting the times called for. Both units had had considerable operational experience & were fast reaching a high state of training.

The first seven 337 Bty targets & 39 target was fired from the first position occupied located at the western edge of ELDEN and completely exposed to the enemy on high ground 2500 yds away when the smoke screen was not functioning. The Bty moved to an alternative position M.R. 756724 at 2200 hrs on Friday the 13th of April 1945. Except for the Bty medical trying to be helpful by leading a vehicle through a narrow entrance between two deep waterfilled ditches & instead, falling into the ditch landing on a long dead cow, the night occupation went surprisingly well for a unit who had only done it once before. Only one vehicle was found next morning laying on its side in a ditch.

The move back to the original position was completed at 1300 hrs on the 14th of April 45 but the re-occupation took place in full view of the enemy only 2500 yds away, the friendly smoke screen had ceased to function & firing a salvo at 1431 hrs the same afternoon gave the show away completely.

Lt Reid with 338 Bty was also having many headaches. His obsolete Meyer Dumore projectors were giving very pro-German service by not delivering their full complement of rockets when fired. An alternative position was reached by Lt Reid but never occupied, his first six targets were fired from one position which was in a cherry orchard, only three quarters of the orchard exists now.

On the 15th April 45 a gun position at 781803 was occupied at midnight by both Batteries and a final Bty salvo was fired by both Btys at 0600 hrs in the morning. This two Bty salvo finished the ARNHEM operation for the Bty & operations with 49 Div and both Btys moved into ARNHEM to live.

3. CHANGES IN ORGANIZATION

This was the first time that two Btys had been used in the same operation. This was a decided advantage as seventeen targets were engaged in the time it normally takes one Bty to engage nine targets.

4. STATE OF EQUIPMENT

The baffle plates on the Tilley Stevens projectors continued to buckle but held up until the end of the operation.

The Meyer Dumore projectors used by 338 Bty, as stated before, have very poor service & practically everything about them failed off

and on during the operation, except the mobility of the weapon. Twelve new Tilley Stevens projectors received at the Rocket Camp on the 31st March 45 were modified by our own L.A.D. and delivered to the 338 Bty. at the end of the operation. The M.D. equipments were immediately marked EA B.L.R.

5. POINTS OF INTEREST

Lt. N. Reid proved himself capable of conquering any emergency when receiving the last position. The original intention was to occupy a two Bty. position east of the Neder Rijn and after a preliminary recce there it was decided to stay on the 'Island'. Time was short and darkness was coming fast. The ferry it was planned to cross back to the 'Island' on, had closed down for the night and was tied up on the far side, but a motor boat lay on this side, the boat used by the Engineers to cross to their ferry in the mornings. Lt. Reid, gathering up a survey staff, equipment and assuming a nautical air, took off after several heart-tearing attempts to master the non-co-operative engine. Lt. Reid's staff reached the new position only just in time to obtain a 'fix' before it became dark. The remainder of the recce group took the long way back arriving after dark. It is not known whether the engineers swam across to their ferry the next morning or not.

The original positions chosen were at RIJKERSWOERD, two thousand yards south of ELDEN. Both Bty.s chose gun areas side by side, and several salvos were dumped when it was decided to move forward. The area was heavily mined, so before doing a recce Lt. Reid went to 49 Div and secured information as to mine belts. He suddenly developed weakening of the knees and fluttering of the heart when he learned from the mine map that he had dumped those salvos right in the middle of a mine field. He hoped that the map was wrong but was assured by 49 Div they were right. However the rounds were retrieved. At the same position, Baker troop of 337 Bty were forced to use a position which contained twelve cows which were in an advanced state of decomposition, and the weather was hot.

As previously stated, the 337 Bty were operating in full view of the enemy who were holding high ground 2500 yards to our left flank. Retaliation fire was expected and received on the 14 April at 1700 hrs. Firstly "Moaning Minnie's" were directed at the gun position, but all fell short and then shelling by 105's began for twenty minutes. Shells fell on the gun position and around B Echelon area and the Bty. Command Post but our luck still held and no damage was sustained. Sgt.-Major West and a visiting officer were inspecting the equipment when the first rounds fell and immediately took cover in a large ditch, full of water, running through the gun position, but as they were still only a few yards away from a fully loaded projector, they swam away as fast as possible.

The only other unit in the area was the 40th Bty from 11 Army Field on our right flank. Capt. G Howden, C.P.O., who later became Bty Capt. of the Rocket Bty., reported that his anti-air staff froze and turned white when our first salvo was fired. It was more frightening than anything they had experienced all through Italy, he said.

Most of the targets were inspected and the M.P.I. was found to be right on the map reference given and the effect of the fire was devastating.

OLDENBURG - 25 APRIL 45 4 Cdn Arm'd Div

1. DIV PLAN

In the latter part of April 1945, 4 Cdn Arm'd Div had a small bridgehead over the KUSTEN CANAL, north of FRIESOYTHE (M2 1:100,000). The plan was to enlarge the bridgehead to the north and east which was to include the capture of OLDENBURG.

This plan was subsequently changed and OLDENBURG was to be outflanked by 4 Div who were to drive north on both sides of BAD ZWISCHENAN Lake and capture WIEHLSHAVEN.

2. PART PLAYED BY ROCKET BTY.

The 338 Bty., Lt. Reid C.P.O., was to support this attack by 4 Cdn Div. Gun positions were occupied on April 25th at 141010 (M2 1:100,000). No fire plan or time programme was laid down as the Div. plan was very fluid. Nine targets were fired in all, one Bty. salvo on each.

These were:-

IGTS	M.R.	TIME
1	144065	2100 25 April
2	177045	1110 26 April
3	176049	1124 26 April
4	160064	2123 26 April
5	197030	1615 27 April
6	182090	0300 29 April
7	167109	2204 29 April
8	155113	0732 30 April
9	208112	1430 2 May

The first five targets were engaged from the gun position already stated and the remainder of four targets were engaged from 174057 (M2 1:100,000). The move to this position was most difficult as heavy rains had turned roads and fields into quagmires.

3. EQUIPMENT

The Bty was equipped with 12 new Tilley Stevens projectors for this operation, recently modified by our L.A.D.

These modifications were:-

(i) Strips of iron were welded on the inside of both front and rear baffle plates with cross braces between them.
(ii) The dial sight was raised up level with the barrel group, giving a greater field of vision.

(iii) Full cross level of the dial sight could not be obtained and was remedied by cutting away the bracket and brace supporting bracket and elongating the slot allowing full cross level at full elevation and full traverse. The machined surface was increased to obtain this result.

(iv) The contact point sockets were mounted at all angles making it extremely difficult to plug in during darkness. These were placed vertical.

(v) The hand brake had no spring on it to hold it in the off position. Springs were put on but hand-brakes are really not necessary with the equipment.

(vi) A foot-rest covering the traversing gear for support while loading, was welded on. Loaders were in the habit of placing their foot on the gear for support while loading, causing the gear to bend.

(vii) Stop pins, as experienced with 337 Bty. equipment, would tear out of the barrels and these were re-welded.

These equipments stood up well under the most strenuous conditions ever encountered by the Rocket Bty.

4. PARTICULAR POINTS OF INTEREST

On the night of April 25, 45, a message was received from a forward unit that three enemy S.P.'s were moving down the road toward the Bty. position. Fighting was so fluid that it was not a surprise to receive such a message and Lt. Reid, C.P.O., was quite delighted because we had always talked about the possibilities of engaging tanks with rockets and here might be a chance to experiment. Piats and Brens were manned at the battery position. The Battery Command Post was forward of the gun position, in a comfortable house as usual. Lt. Reid called for one projector and one salvo to be rushed by jeep to the B.C.P., where it was loaded and laid at three degrees elevation down the road along which the S.P.'s were expected to appear. Everyone was hoping the enemy would walk into the trap because, although the tanks would not be knocked out, a salvo of 30 rounds of rockets would certainly scare the occupants to death. However they did not show up much to everyone's disappointment.

On the 3rd May 1945, the Bty. was deployed at 18270847 (#2 1:100,000). A group of twelve Spitfires flew over the position at about 500 feet. One plane dropped two bombs, quite by accident it is hoped, on the position. One bomb did no damage, but the other scored a direct hit on the pivot gun of Fox Troop with devastating results. Thirty rounds of unfuzed ammunition were piled beside the projector. Six rounds detonated and the remainder were scattered over a wide area. The projector was completely destroyed, twisted bits and pieces being found up to 200 yards away. Where the projector and rounds formerly were, was now a crater 30 feet deep and 25 feet across, measured accurately by several officers. By a miracle, no casualties were suffered by any personnel.

5. MORAL

The work of the personnel in the battery was excellent. Moral was high and all ranks were exceedingly proud of their undoubted success in the operation as voiced by Brigadier C.M. Drury, the C.R.A., 4 Div., in a visit to the battery.

6. CIVILIANS AND REFUGEES

The civilians encountered were extremely docile. Many French, Russian, and Polish refugees were encountered on the roads, and although their plight was abominable, they displayed a marked cheerfulness and gratitude which was at times embarrassing.

7. WEATHER AND LOCALITY

The weather during most of the operation was chilly and wet. The fields were soggy from rains and soon became seas of mud from the movements of vehicles and guns. This necessitated a great deal of winching and hard work on the part of the Bty., but was endured with exemplary fortitude.

8. OTHER POINTS OF INTEREST

The target which was engaged at 182090, was examined by Lt. Reid. The target was a collection of houses in a wood, in and about which the enemy had dug trenches. Two of the houses and one barn were completely gutted and the other buildings were damaged extensively. Among the latter was a brewery and distillery which had received a direct hit from rockets. There was a delicious bar room smell about the place and evidence that it had been used as such by our Infantry before the arrival of our M.P.'s and it was interesting to note that the M.P.'s stayed sober.

All the rockets from this salvo were in an area 250 yards deep and 200 yards wide, with an area 100 yards square in the center containing 80 rockets. Another target, examined by Major 1. Bond M.C., two weeks later, received all its rounds in a 350 yard square. On examining the ground, several large stacks of rocket tails were found outside a newly plowed field. The target was partly wooded with large trees, tops were smashed off, big pieces of trunk were torn out and this seemed to bear out the fact that a tree-burst was much more effective. This salvo was followed up immediately by our Infantry and reports from 4 Div. stated that 150 prisoners were taken in this area, all decidedly "bomb-happy" and offering no opposition whatsoever.

The following message was received by Major Bond M.C. from Brigadier C.M. Drury, C.R.A. 4 Cdn Arm'd Div on the 20 May 45.

"Although, owing to other operational commitments, your Bty. was attached to this Div. for a limited period only, it is a source of considerable satisfaction to me, as I know it must be to you, that we were able to finish this war together. Throughout the time of your attachment, I was very much impressed with the excellent shooting and all round work of your unit.

Will you please to the officers and men of your Bty.,

express my appreciation of the fine show they put on while with this Div. and accept yourself my personal thanks for the co-operation and support which you gave me."

This operation was brought to a close by the cessation of hostilities on the Canadian front at 0800 hrs on the 5th day of May 1945. The 1st Cdn Rocket Bty. had fired their last salvo in north-west Europe at 1430 hrs on the 2nd May 1945.

On the 25th April 1945, the base Rocket Camp moved from Tilburg to Almelo V272151, wherettthey live in tents until May 10, and then moved to Enschede.

In Enschede, a complete overhaul was given to every vehicle, and equipment and projectors crated ready for shipment to England.

By the end of May several changes had taken place in officer personnel. Lt. G. Lessard was seriously injured on the 14th of April at Turnhout, when his jeep was overturned by a 60 cwt. truck which failed to stop. Lt. Lessard was replaced by Lt. B.C. Herd who had recently served with the 5th Medium Regiment in Italy. On May 4th, Major R.S. Stronach left the Bty. to return to Canada on rotation leave and Major T. Bond M.C., who had been Bty. Captain since his arrival on 1st January 1945, was promoted and given command of the Bty. On May 9th, Captain G. Howden joined the Bty. as Bty. Captain. Captain Howden, formerly with the 11th Army Field, had seen considerable service both in Sicily and Italy. Lt. W. Tripp, the Battery's competent RCENE officer and official scrounger, developed a serious case of rheumatism and returned to England on May 20th, 1945. He was replaced on 30 May 1945, by Lt. Crerar, nephew of the G.O.C. in C. 1st Cdn Army, who had just recently arrived from Canada.

At the beginning of June, the 1st Cdn Rocket Bty. received their final job in NWE and this was guarding the A.D.C.S. car pool on the Arnhem Airfield, four Km. north of Arnhem.

APPENDIX 'A'COMMANDING OFFICERSMajor E.A. Royce

Commanded the L.S.M. Cadre from September

Major R.S. Stronach

Commanded the 1st Cdn Rocket Bty., RCA, from
until 4 May 1945.

Major T. Bond M.C.

Commanded the 1st Cdn Rocket Bty., RCA, from 5 May 1945,
until disbandment of the unit.

APPENDIX 'B'O.R. CASUALTIESGunner Wallace Knezovich

Killed in action on the 29th March 1945, in the Rhine River
crossing.

Gunner Frederick James Craig

Wounded in action on the 29th of March 1945, in the Rhine
River crossing, and died of wounds on the 6th of April 1945.

APPENDIX 'C'BLOCK SYLLABUSOfficers and AblesGun Drill

- 1-2. To come into action, to go out of action, laying guns in Z.L., director method.
- 3-4. Parallelism (check Z.L., prismatic compass, distant object, combination method).

Equipment

1. Sights.
2. Electrical apparatus.

Ammunition

1. Shell and Fuze.
2. Motor.

Directors

1. Setting up and description.
- 2-3 Laying director in Z.L. (accurate method)
- 4-5 Passing a line. (re-cap)
- 6-7 Passing the line to the guns.
- 8-9. Check Z.L.
- 10-11 Re-cap
- 12-16 Practical re-cap.

Artillery Boards.

1. Description, uses.
- 2-3 Setting up (1 troop)
- 4-5 Setting up (3 troops)
- 6-7 Re-cap
- 8-10 Plotting targets
- 11 Cardinal Point Corrections.
- 12-16 Plotting re-cap.

Deployment

1. Organization
2. Selection and occupation of gun area.
3. Organization of Troop C.P., selection of gun positions, alternative positions.

Technical Duties

- 1-2 Duties of the Troop C.P., concentration and position corrections.
- 3 Night occupation, DF & SOS Tasks, Grids.

Fire Discipline

1. Fire discipline.
2. Recap.

Bty. C.P.

1. Organization.
- 2-3 Technical work at C.P.
- 4-7 C.P. exercise

Drill Order

- 1-8 C.P.O., G.P.O., TL's, T/BSM's Ables, Gun Group

Maths and Survey

- 1-3 Logarithms
- 4-6 Brg and Distance
- 7-9 Inter Bty Survey

Survey Scheme

- 1-8 C.P.O., A/C.P.O., C.P.O. Ables.

Meteor and C of M

- 1-2 Introduction, Meteor Telegram, Range Table.
 3-4 Wind- Correction of the Moment.
 5-6 Ground instrument. Proforma.
 7-12 Recap.

Signals

- 1-2 Signal hook-up, Arty. orders.
 3-6 Practical exercise.

64 periodsBLOCK SYLLABUS

WCO's & GNRS.

SUBJECTTOTAL PERIODSBREAK DOWN

Gun drill

24

1. Detachments rear. Tell off. Positions in action. Prepare for action.
2. Action front. Hook in
3. Laying the guns in the Z.L.
4. " " " " " "
- Record Z.L.
5. Take post to lay.
6. Loading and firing
- 7-10. Laying practice.
11. Check zero line.
- 12-24. Re-cap.

Equipment.

8

1. General description. Care and maintenance.
- 2-3. Sights
4. Electrical circuits.
- 5-8 Sight testing.

Ammunition

10

1. Shell, fuze and motor.
- 2-10 Ammunition Assembly.

Directors

Arty boards.

2

1. General description and use of directors.
2. General description and use of Arty boards.

Organisation

3

- 1-2 Deployment, Recce, and occupation of position.
3. Troop C.P., Tech. duties, organization.

Fire Discipline

5

- 1-2 Arty. fire orders- Fire discipline.
- 3 Concentrations and position con.
- 4 Night occupation.
- 5 Fire discipline rec -question

Drill Order

8

- 1-8 Local drill order

Spare

4

- 1-4 Used when needed for any subject.

1. This syllabus was devised with the following points in mind :
 - (a) To give instruction to LAA gunners who had had little or no experience in field gunnery.
 - (b) Operational commitments were such that a maximum of eight days was allotted for the training of a LAA battery in the use of the rockets.
 - (c) In view of (b) above, one field gunner officer and one BSM (A.I.C.), were to be with each battery of 12 rockets in action, the field gunner officer to act as C.P.O. and the BSM as A.I.C., and as technical advisors to the LAA Bty. Commander.

2. Officers and Ables Syllabus

- (a) More instruction was needed in the use of directors and arty. boards.
- (b) One drill order was definitely insufficient, but it did serve to iron out the major difficulties.
- (c) It was very difficult to combat the tendency by all ranks to do their work in a rather leisurely fashion. But once this had been overcome, the results obtained were good.

3. Meteor and Correction of the Moment

- (a) This training proved to be satisfactory. Three of the ables were selected to concentrate on this work only.

4. NCO's and Gunner's Syllabus

- (a) More training necessary in fire discipline and the use of the dial sight.
- (b) Lack of sufficient drill orders and practice in coming into and out of action was apparent in the first few operations. But this subsequently improved as time went on.